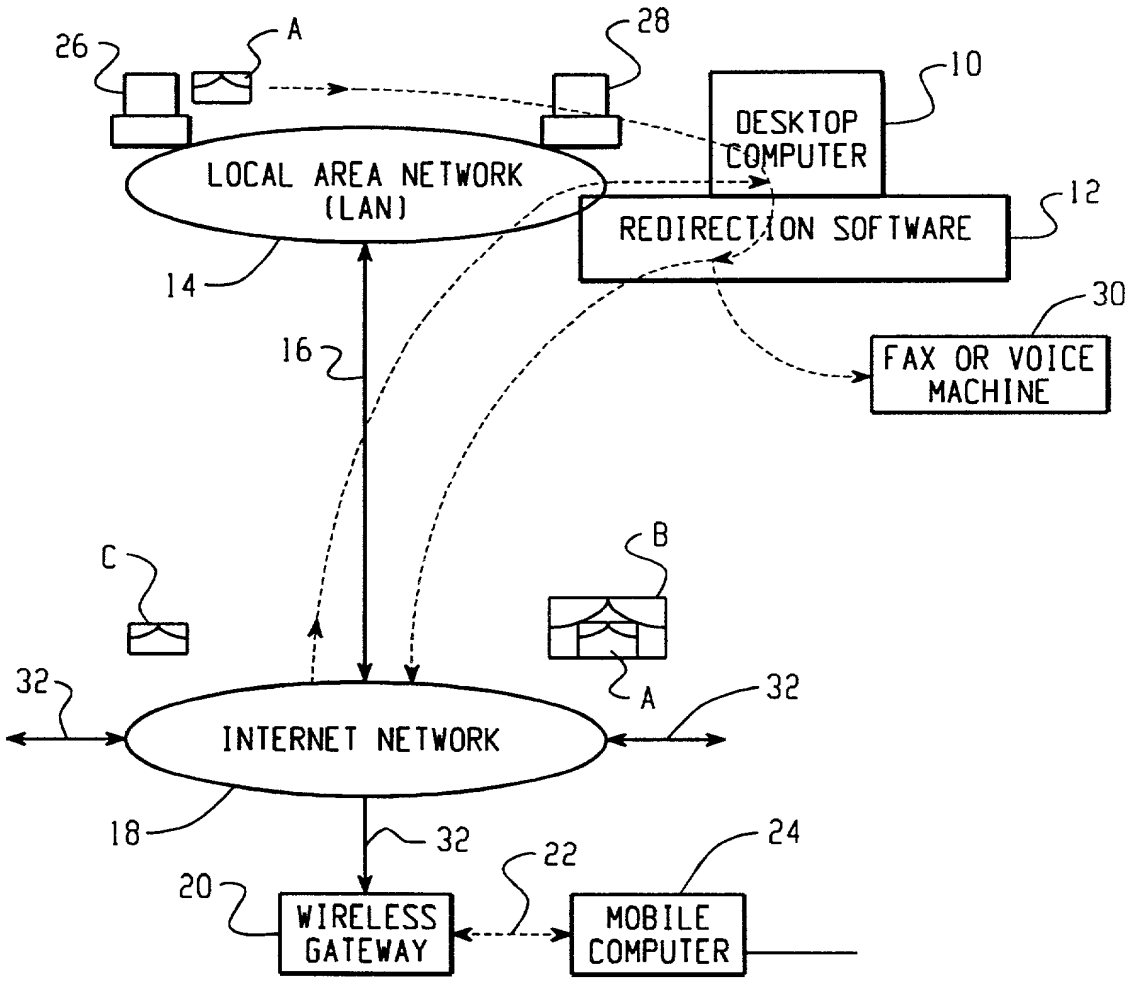


Fig. 1

09827609 040501

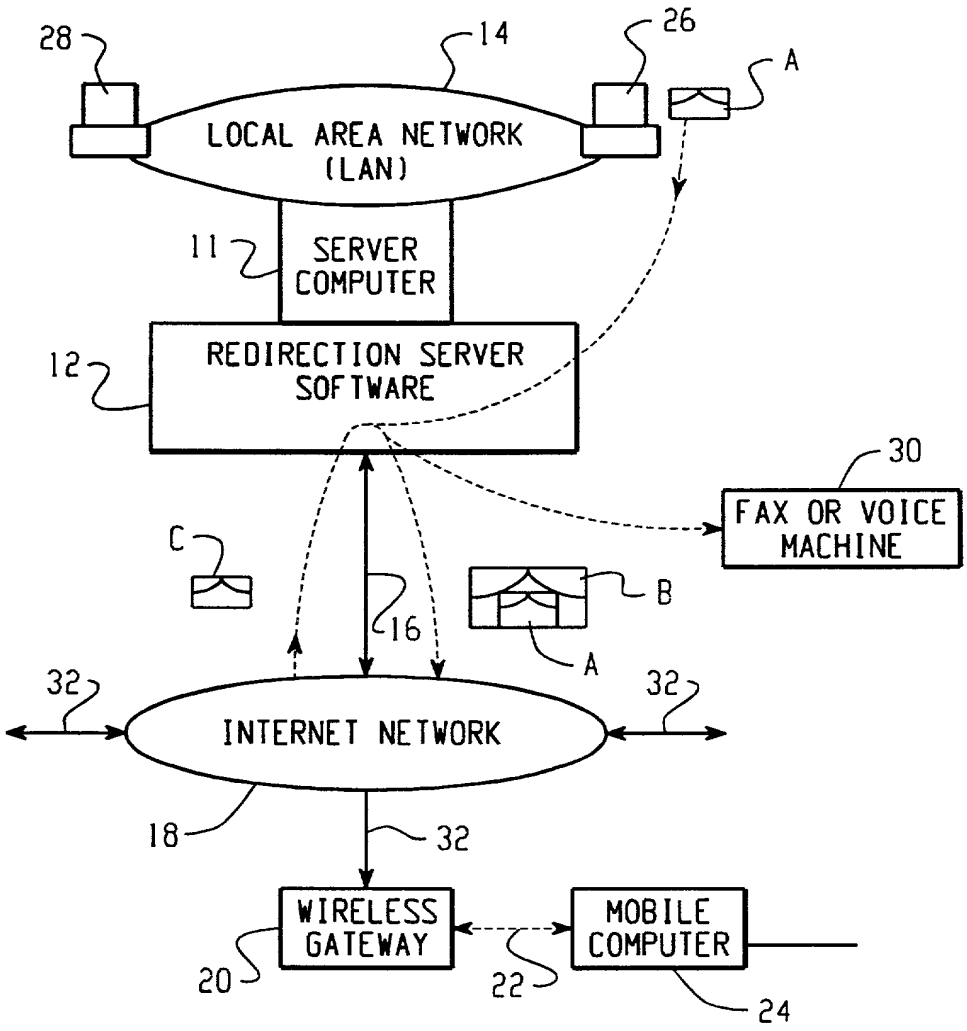


Fig. 2

09527605 - 040503

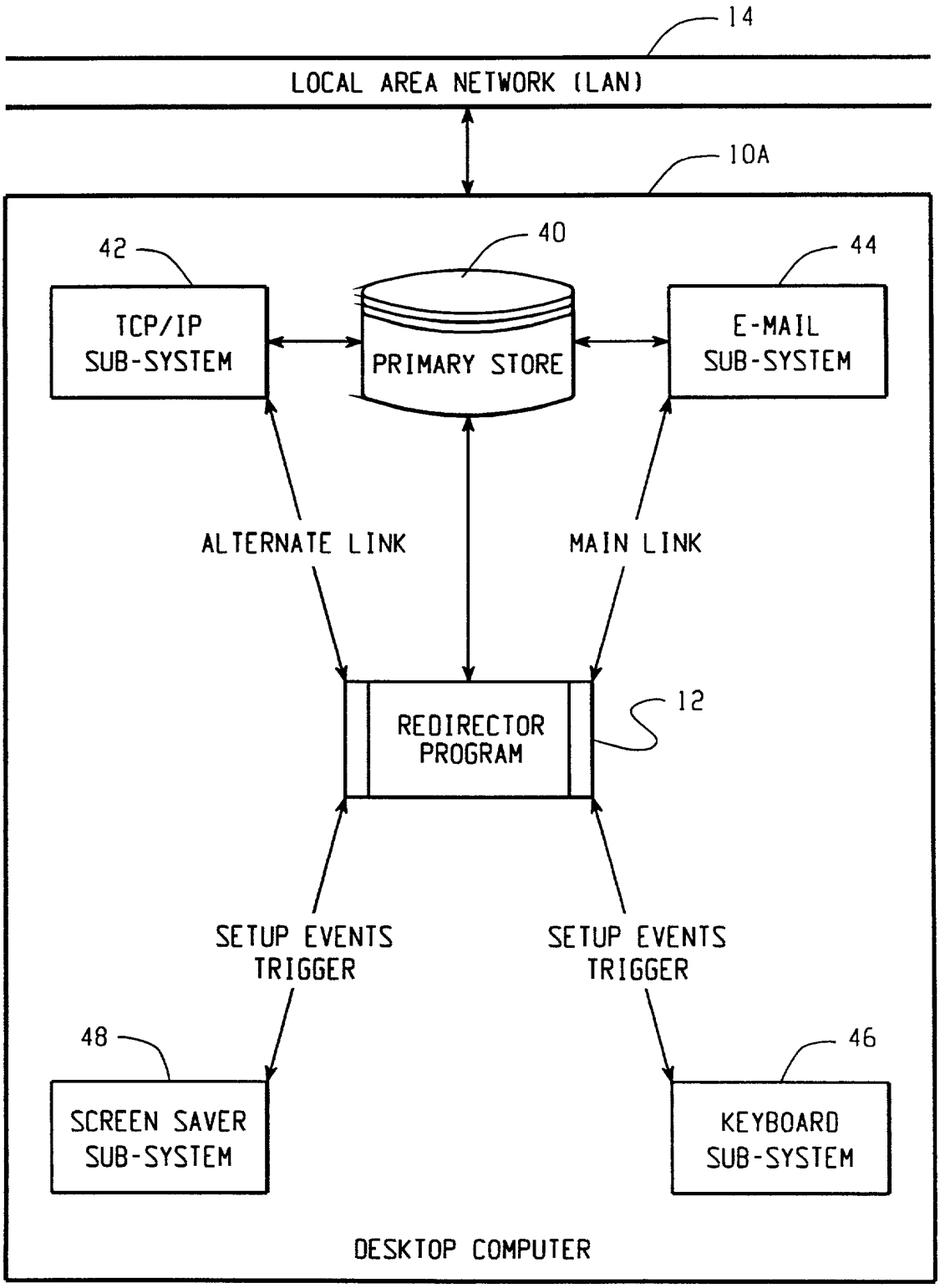

14
LOCAL AREA NETWORK (LAN)
10A
42
40
44
TCP/IP
SUB-SYSTEM
PRIMARY STORE
E-MAIL
SUB-SYSTEM
ALTERNATE LINK
MAIN LINK
REDIRECTOR
PROGRAM
12
SETUP EVENTS
TRIGGER
SETUP EVENTS
TRIGGER
48
46
SCREEN SAVER
SUB-SYSTEM
KEYBOARD
SUB-SYSTEM
DESKTOP COMPUTER

Fig. 3

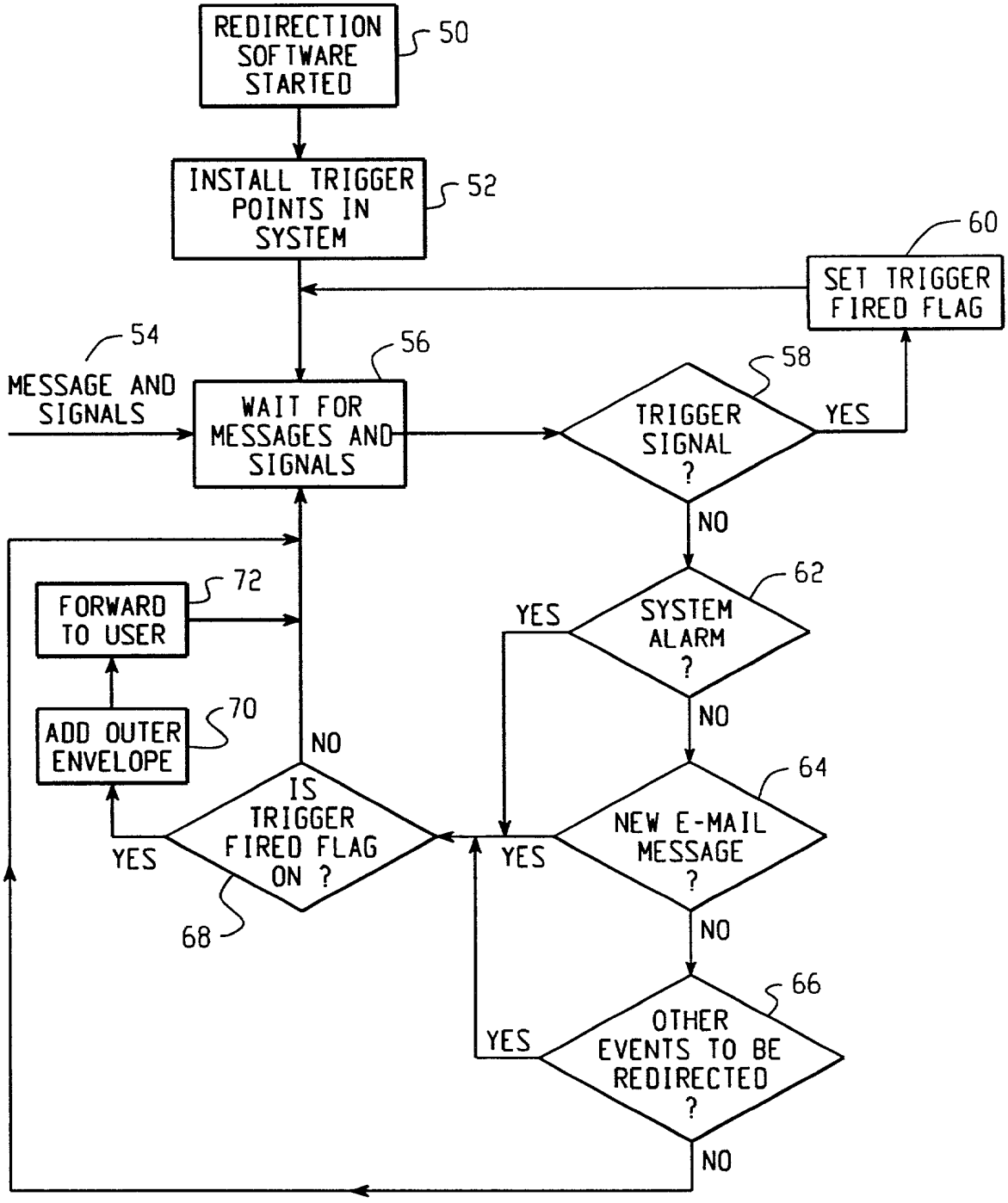

REDIRECTION SOFTWARE STARTED
50
INSTALL TRIGGER POINTS IN SYSTEM
52
60
SET TRIGGER FIRED FLAG
54
MESSAGE AND SIGNALS
56
WAIT FOR MESSAGES AND SIGNALS
58
TRIGGER SIGNAL ?
YES
NO
62
SYSTEM ALARM ?
YES
NO
64
NEW E-MAIL MESSAGE ?
YES
NO
66
OTHER EVENTS TO BE REDIRECTED ?
YES
NO
72
FORWARD TO USER
70
ADD OUTER ENVELOPE
IS TRIGGER FIRED FLAG ON ?
YES
NO
68

Fig. 4

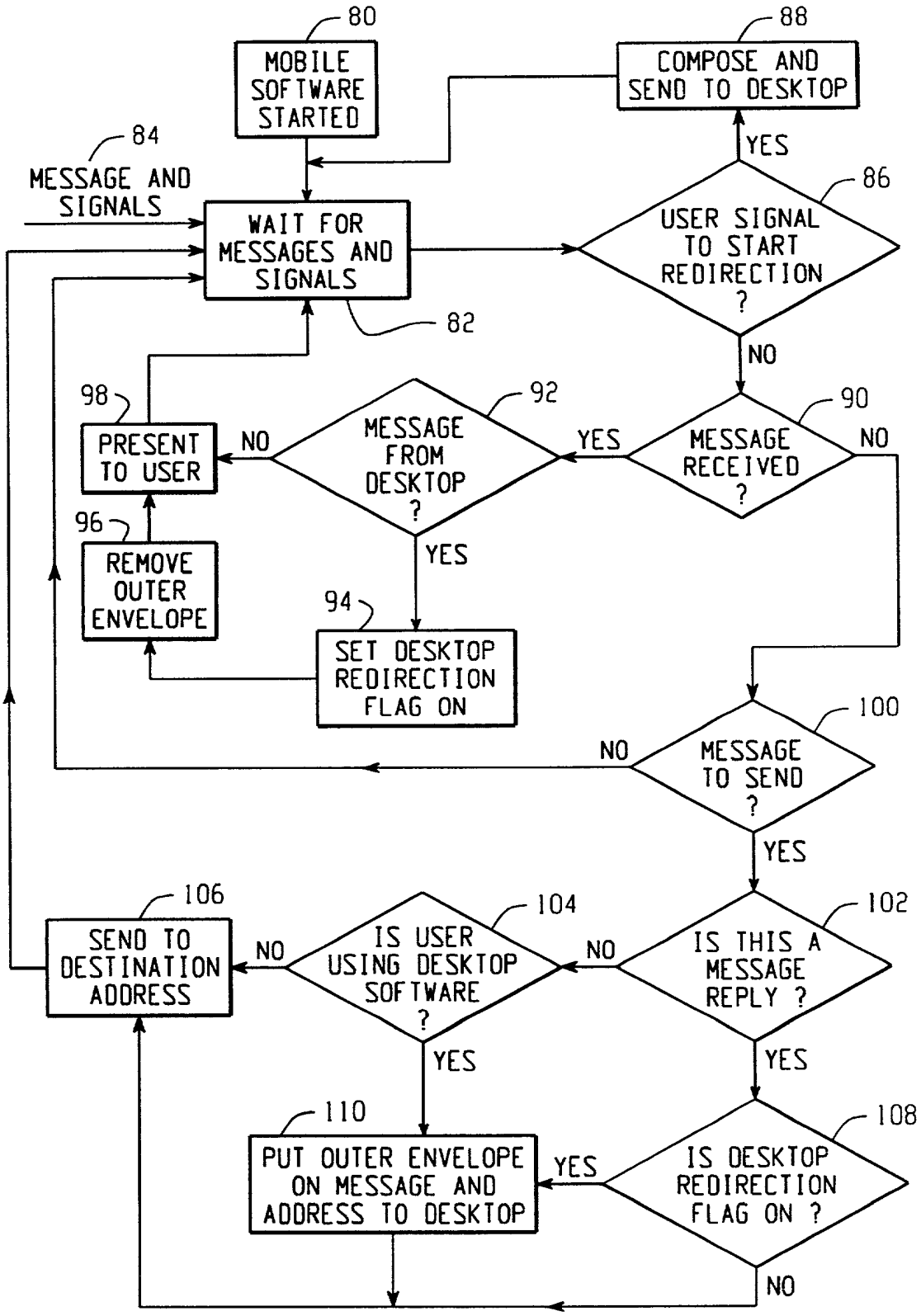

80
MOBILE SOFTWARE STARTED
88
COMPOSE AND SEND TO DESKTOP
84
MESSAGE AND SIGNALS
WAIT FOR MESSAGES AND SIGNALS
82
YES
86
USER SIGNAL TO START REDIRECTION ?
NO
98
PRESENT TO USER
NO
92
MESSAGE FROM DESKTOP ?
YES
90
MESSAGE RECEIVED ?
NO
96
REMOVE OUTER ENVELOPE
YES
94
SET DESKTOP REDIRECTION FLAG ON
100
NO
MESSAGE TO SEND ?
YES
106
SEND TO DESTINATION ADDRESS
NO
104
IS USER USING DESKTOP SOFTWARE ?
NO
102
IS THIS A MESSAGE REPLY ?
YES
YES
110
PUT OUTER ENVELOPE ON MESSAGE AND ADDRESS TO DESKTOP
YES
108
IS DESKTOP REDIRECTION FLAG ON ?
NO

Fig. 5

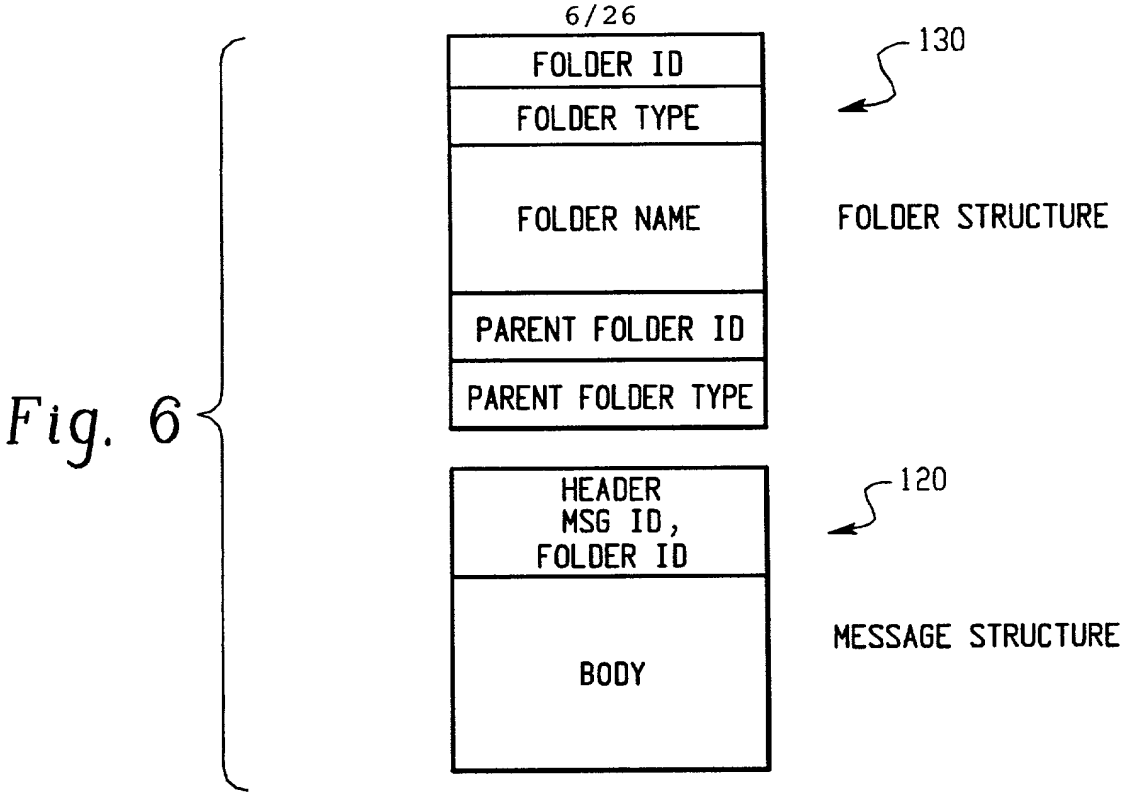


Fig. 6

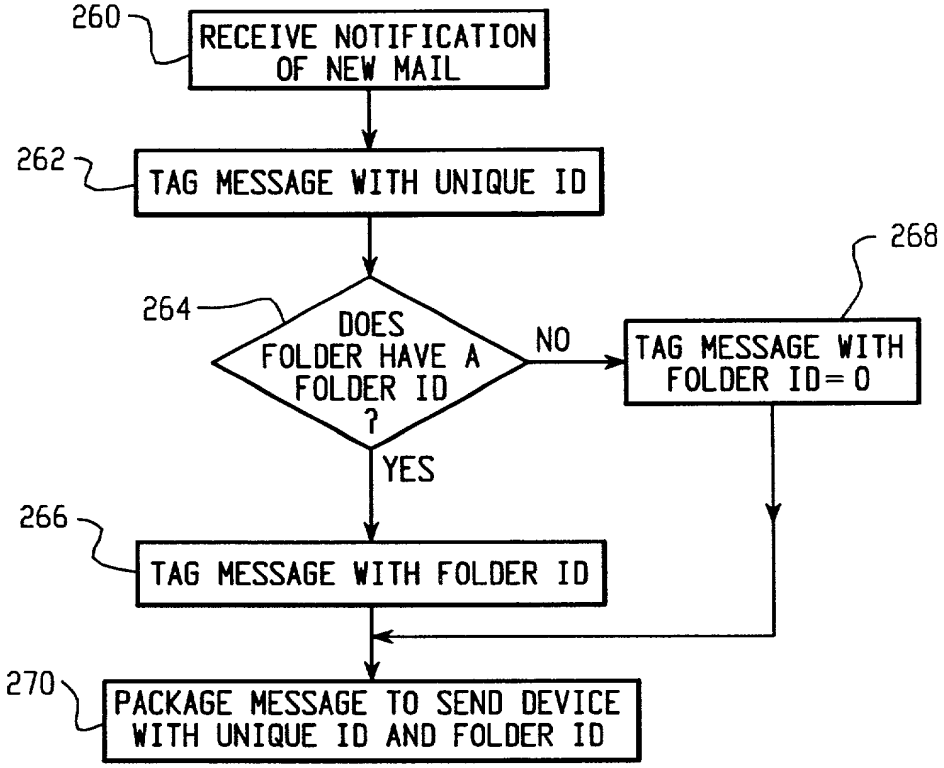


Fig. 11

Attorney Docket No. 50277-2550

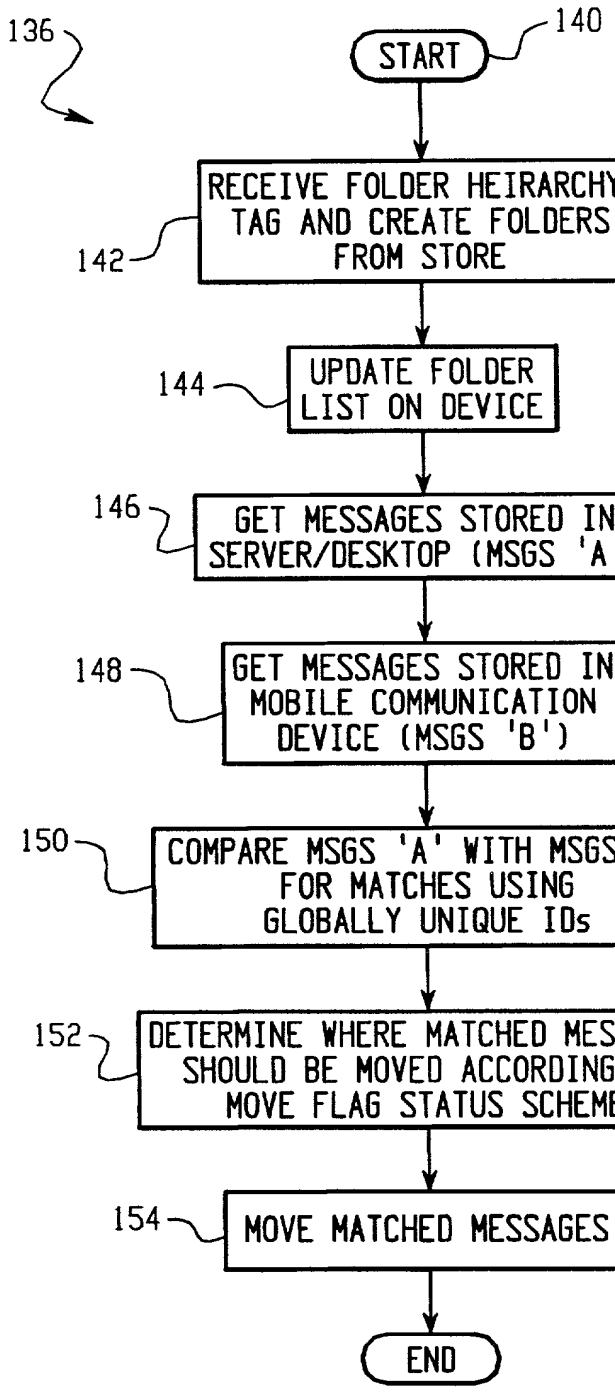


Fig. 7

09827509 - 041605

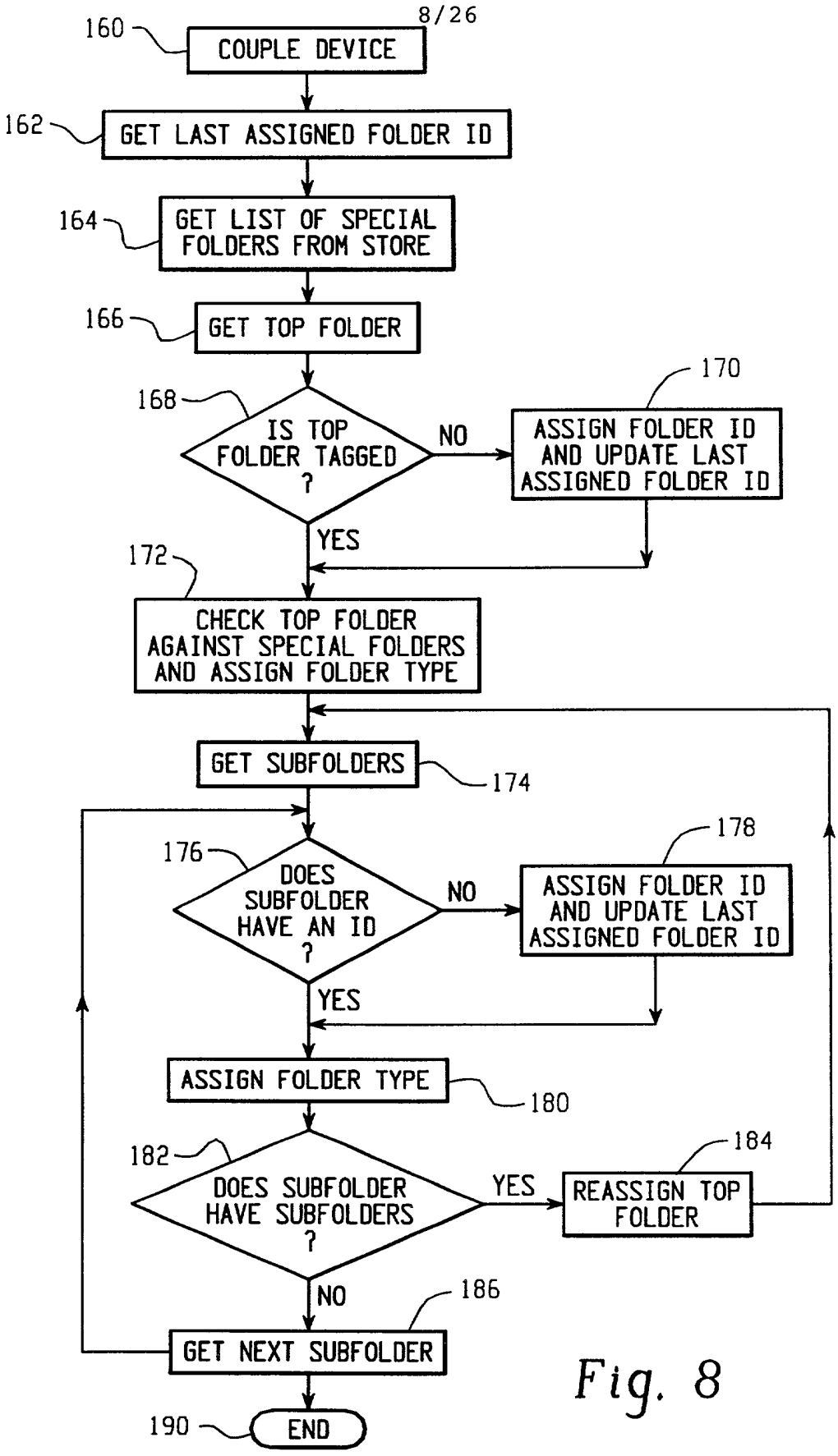


Fig. 8

09527605 - 040601

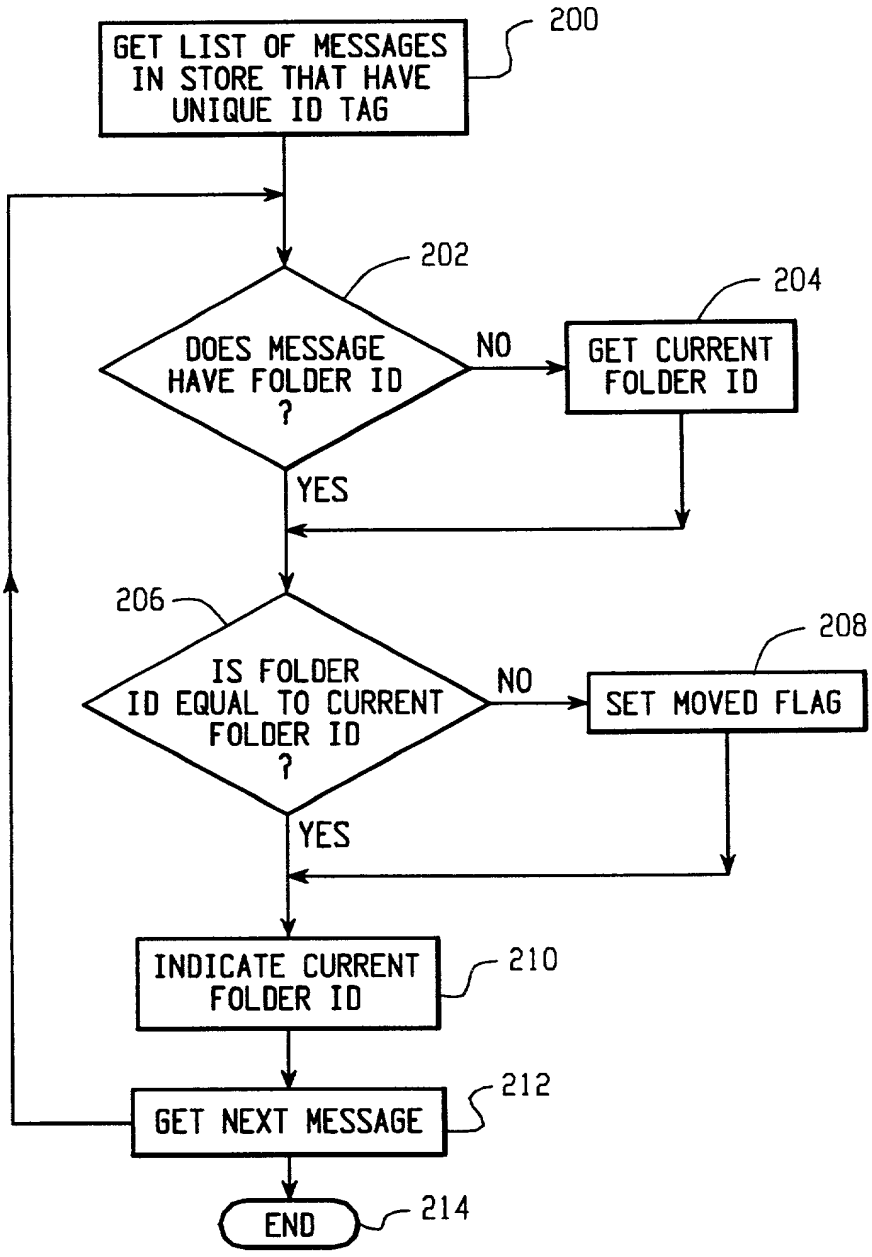

GET LIST OF MESSAGES IN STORE THAT HAVE UNIQUE ID TAG
200
DOES MESSAGE HAVE FOLDER ID ?
202
NO
GET CURRENT FOLDER ID
204
YES
IS FOLDER ID EQUAL TO CURRENT FOLDER ID ?
206
NO
SET MOVED FLAG
208
YES
INDICATE CURRENT FOLDER ID
210
GET NEXT MESSAGE
212
END
214

Fig. 9

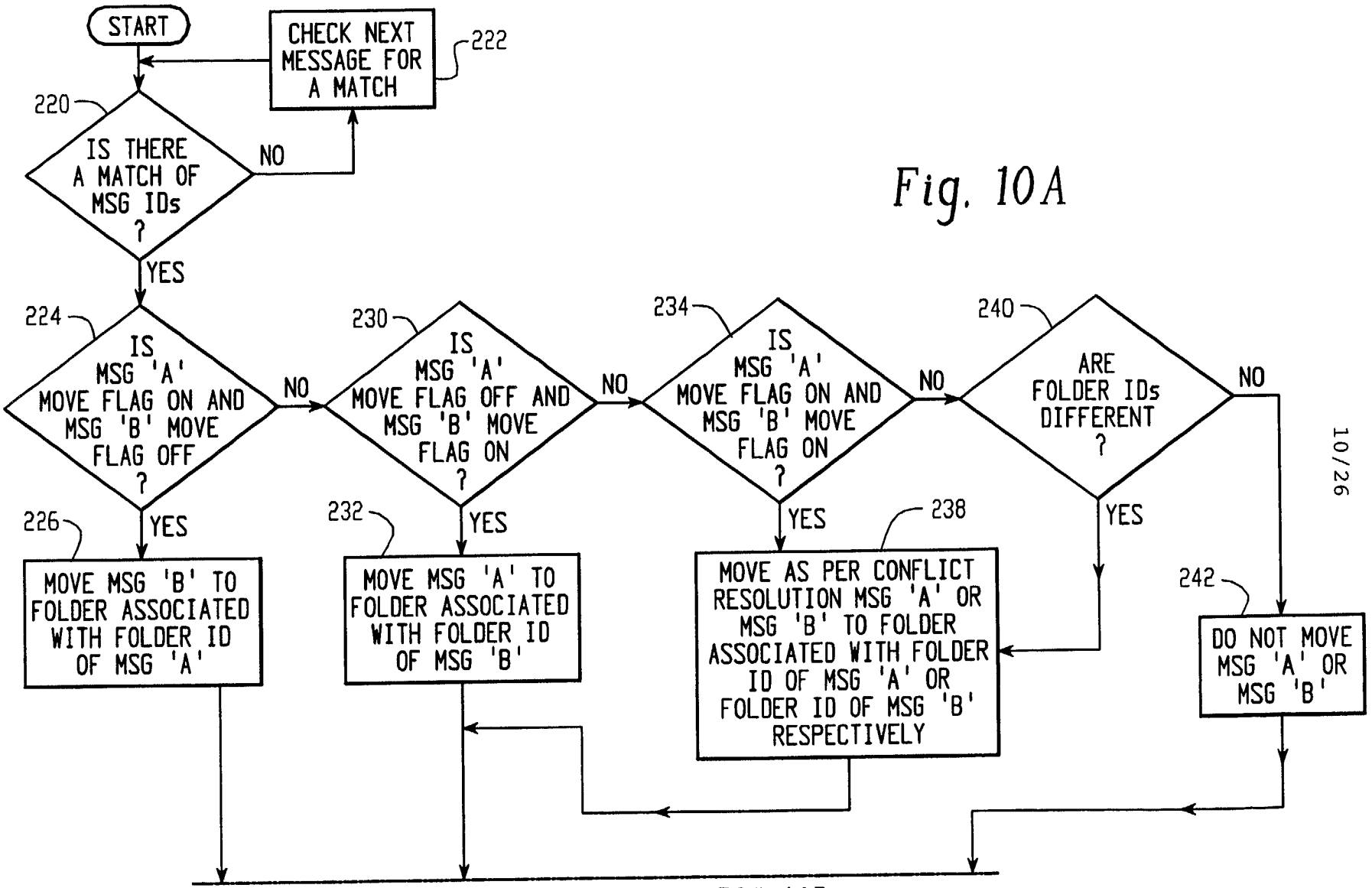

START
CHECK NEXT MESSAGE FOR A MATCH
222
220
IS THERE A MATCH OF MSG IDs ?
NO
YES
224
IS MSG 'A' MOVE FLAG ON AND MSG 'B' MOVE FLAG OFF ?
NO
230
IS MSG 'A' MOVE FLAG OFF AND MSG 'B' MOVE FLAG ON ?
NO
234
IS MSG 'A' MOVE FLAG ON AND MSG 'B' MOVE FLAG ON ?
NO
240
ARE FOLDER IDs DIFFERENT ?
NO
YES
226
MOVE MSG 'B' TO FOLDER ASSOCIATED WITH FOLDER ID OF MSG 'A'
232
YES
MOVE MSG 'A' TO FOLDER ASSOCIATED WITH FOLDER ID OF MSG 'B'
YES
238
MOVE AS PER CONFLICT RESOLUTION MSG 'A' OR MSG 'B' TO FOLDER ASSOCIATED WITH FOLDER ID OF MSG 'A' OR FOLDER ID OF MSG 'B' RESPECTIVELY
YES
242
DO NOT MOVE MSG 'A' OR MSG 'B'
MATCH TO FIG. 10B

Fig. 10A

MATCH TO FIG. 10A

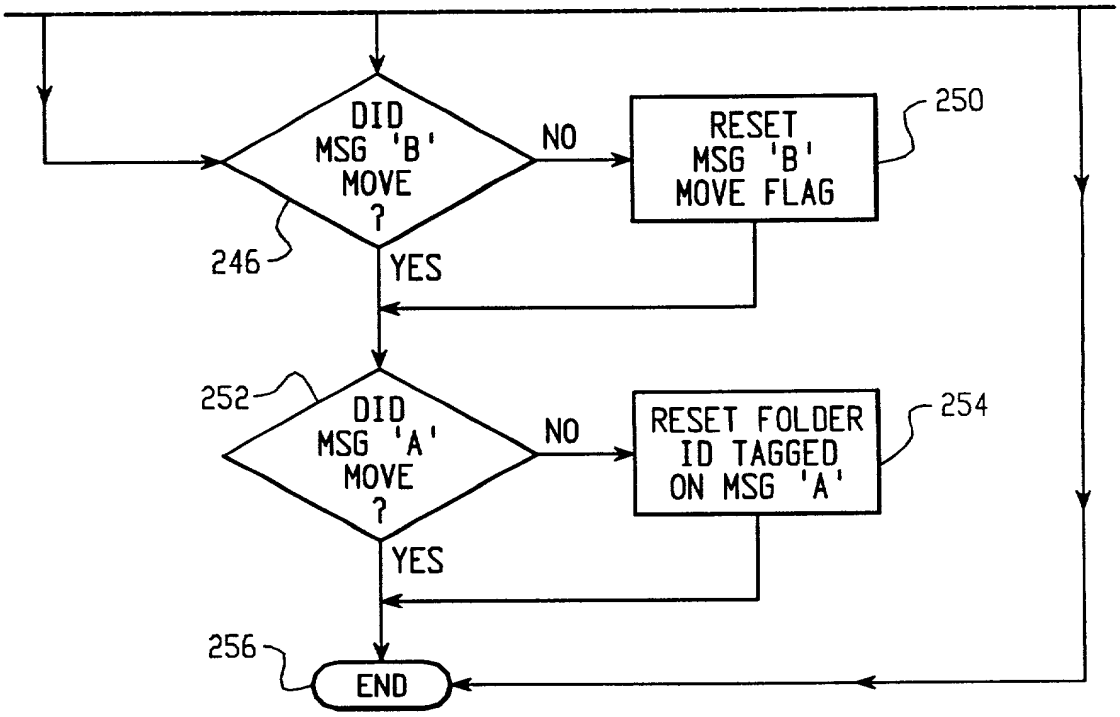


Fig. 10B

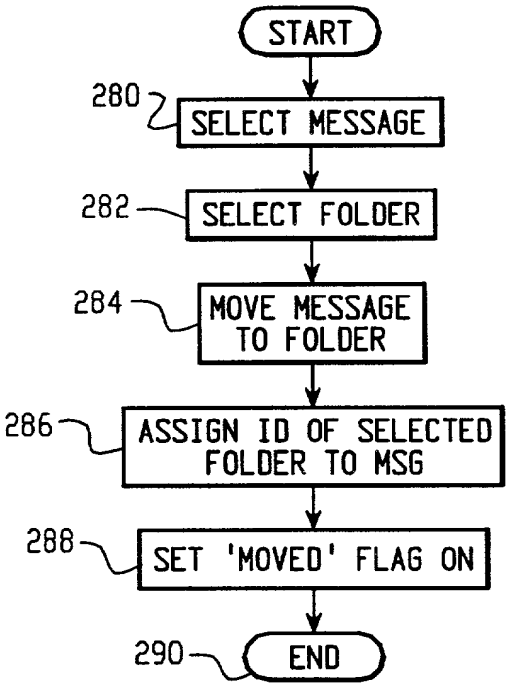


Fig. 12

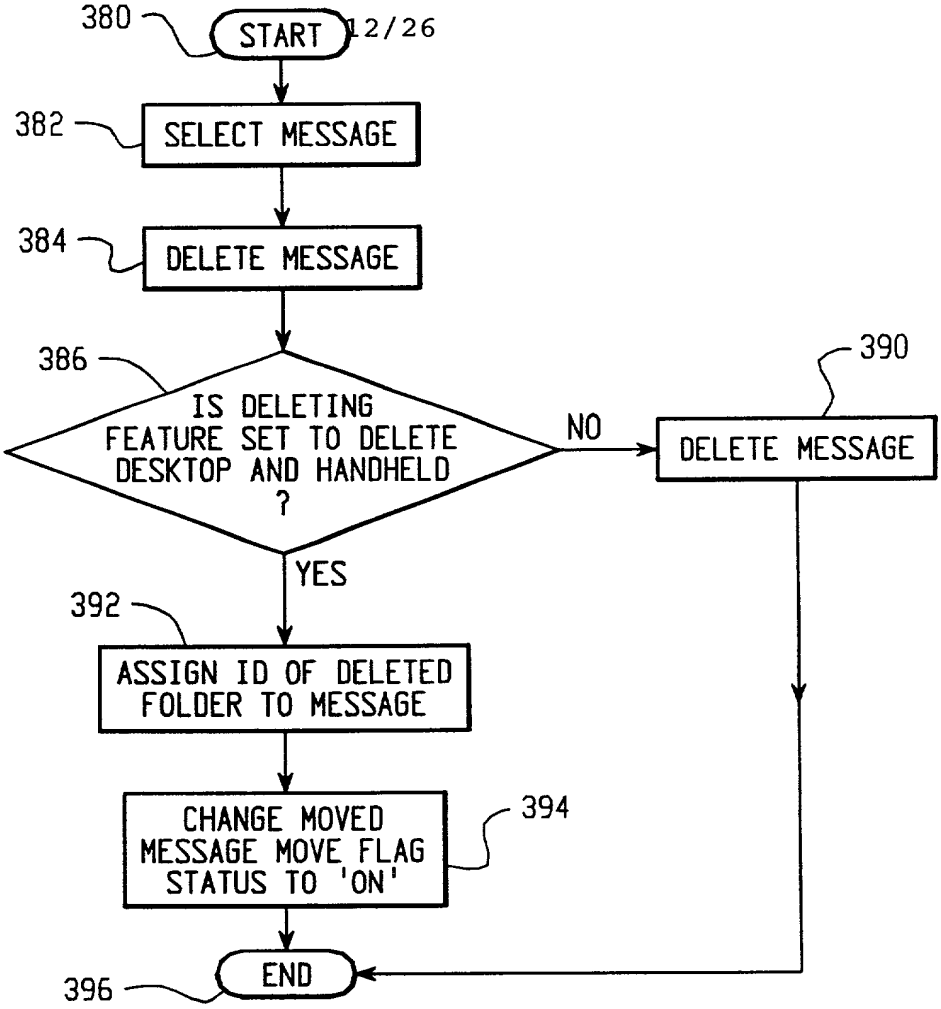

380
START
382
SELECT MESSAGE
384
DELETE MESSAGE
386
IS DELETING FEATURE SET TO DELETE DESKTOP AND HANDHELD ?
NO
390
DELETE MESSAGE
YES
392
ASSIGN ID OF DELETED FOLDER TO MESSAGE
CHANGE MOVED MESSAGE MOVE FLAG STATUS TO 'ON'
394
END
396

Fig. 13

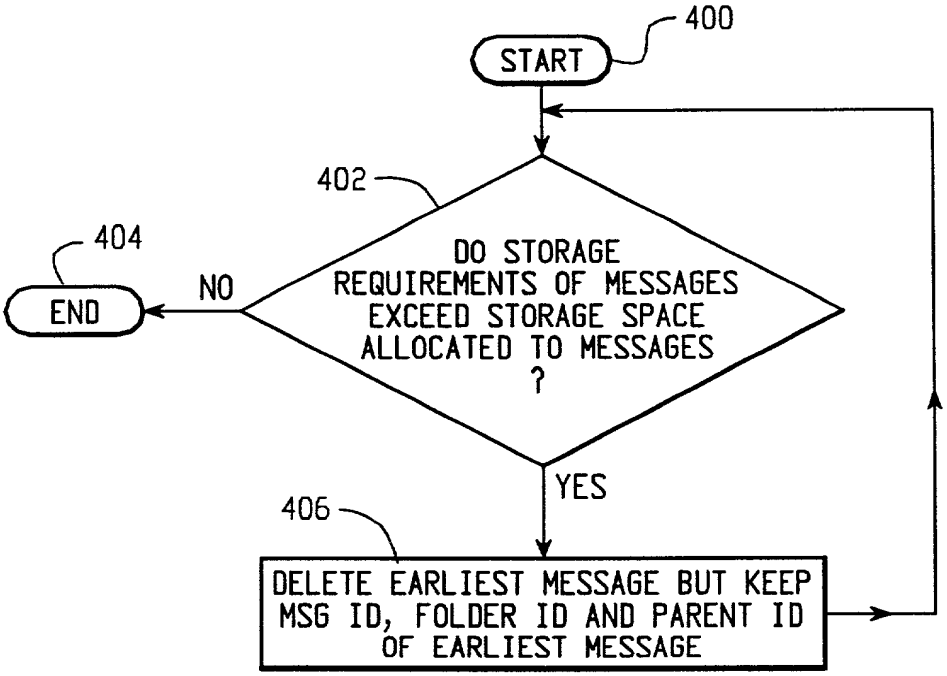

400
START
402
DO STORAGE REQUIREMENTS OF MESSAGES EXCEED STORAGE SPACE ALLOCATED TO MESSAGES ?
NO
404
END
YES
406
DELETE EARLIEST MESSAGE BUT KEEP MSG ID, FOLDER ID AND PARENT ID OF EARLIEST MESSAGE

Fig. 14

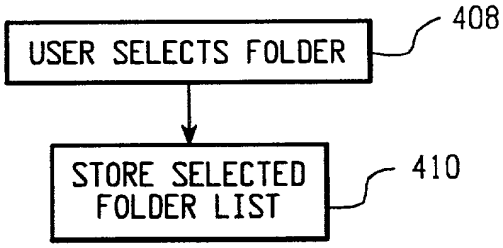

USER SELECTS FOLDER
408
STORE SELECTED FOLDER LIST
410

Fig. 15

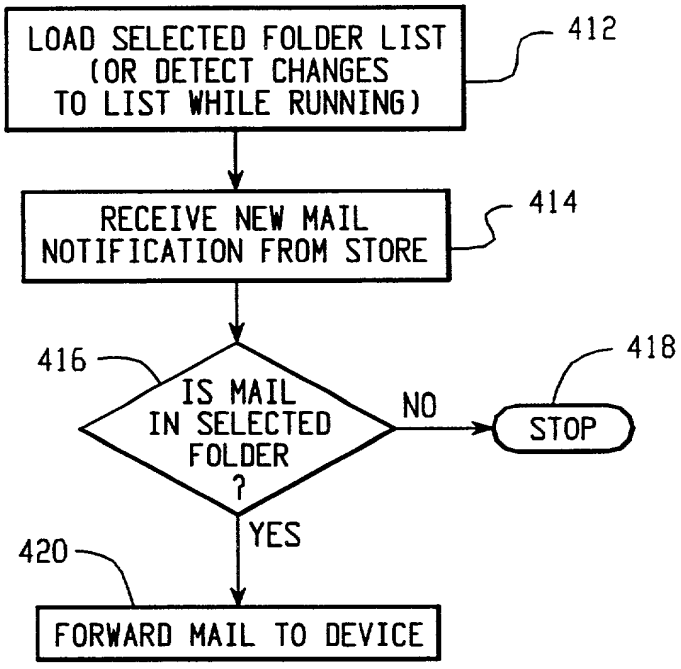

LOAD SELECTED FOLDER LIST (OR DETECT CHANGES TO LIST WHILE RUNNING)
412
RECEIVE NEW MAIL NOTIFICATION FROM STORE
414
416
IS MAIL IN SELECTED FOLDER ?
NO
418
STOP
YES
420
FORWARD MAIL TO DEVICE

Fig. 16

Figure 17

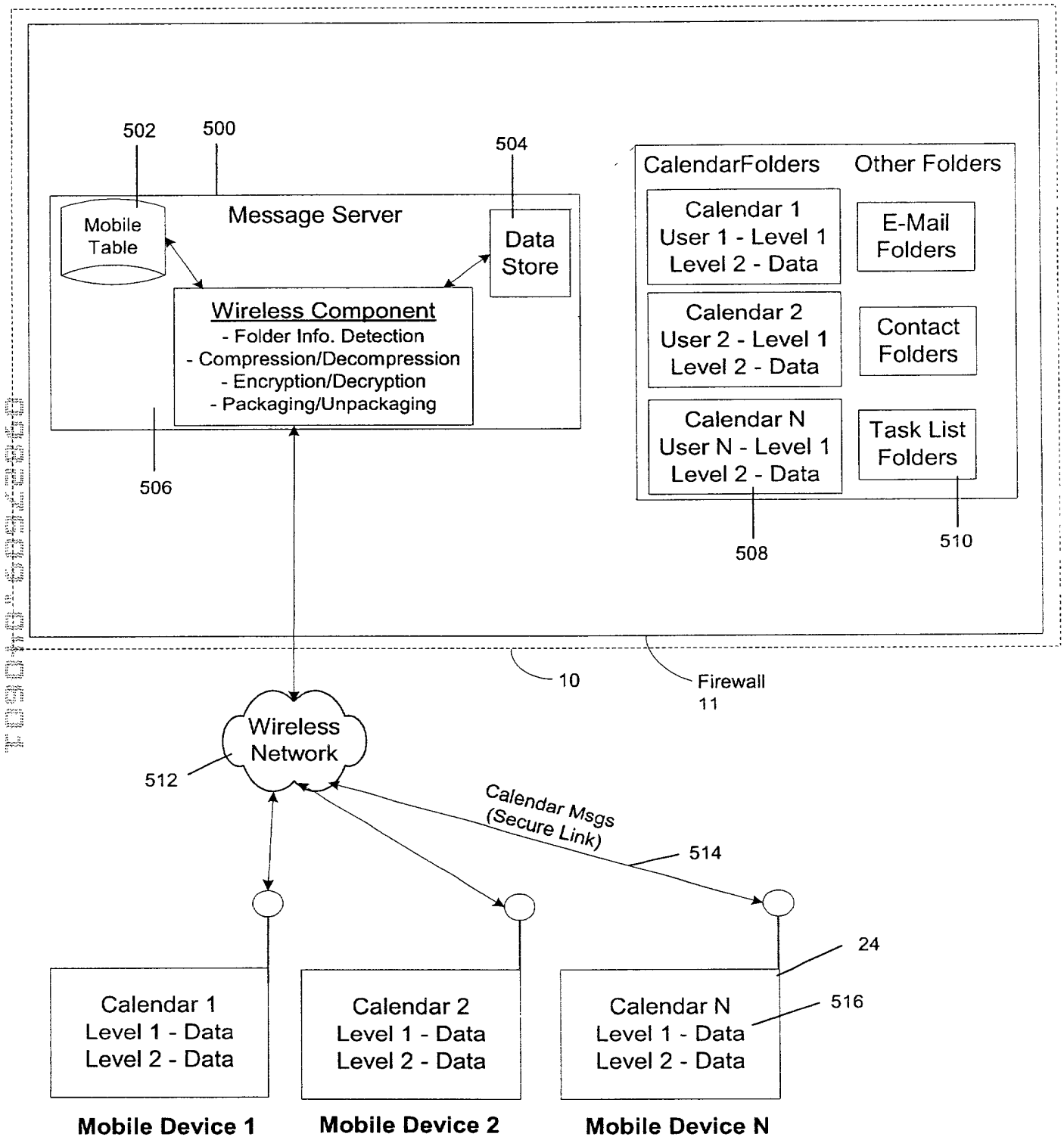

502
500
504
Mobile Table
Message Server
Data Store
Wireless Component
- Folder Info. Detection
- Compression/Decompression
- Encryption/Decryption
- Packaging/Unpackaging
506
CalendarFolders
Other Folders
Calendar 1
User 1 - Level 1
Level 2 - Data
E-Mail Folders
Calendar 2
User 2 - Level 1
Level 2 - Data
Contact Folders
Calendar N
User N - Level 1
Level 2 - Data
Task List Folders
508
510
10
Firewall
11
Wireless Network
512
Calendar Msgs
(Secure Link)
514
24
516
Calendar 1
Level 1 - Data
Level 2 - Data
Calendar 2
Level 1 - Data
Level 2 - Data
Calendar N
Level 1 - Data
Level 2 - Data
Mobile Device 1
Mobile Device 2
Mobile Device N

Figure 18a

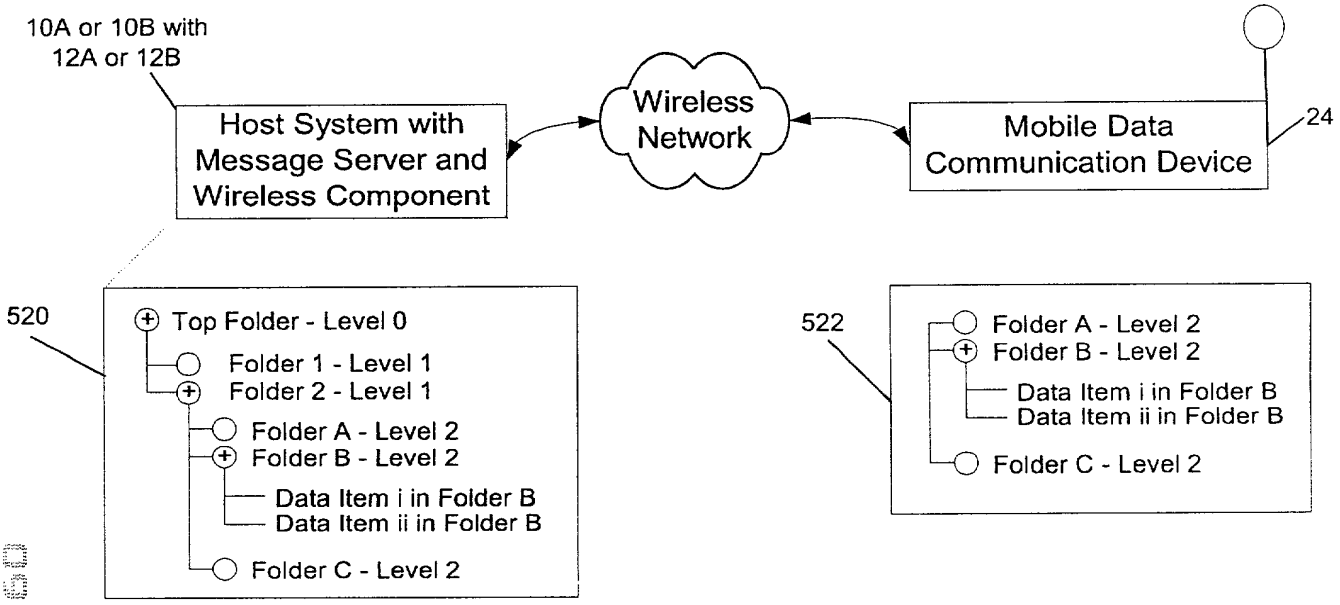


Figure 18b

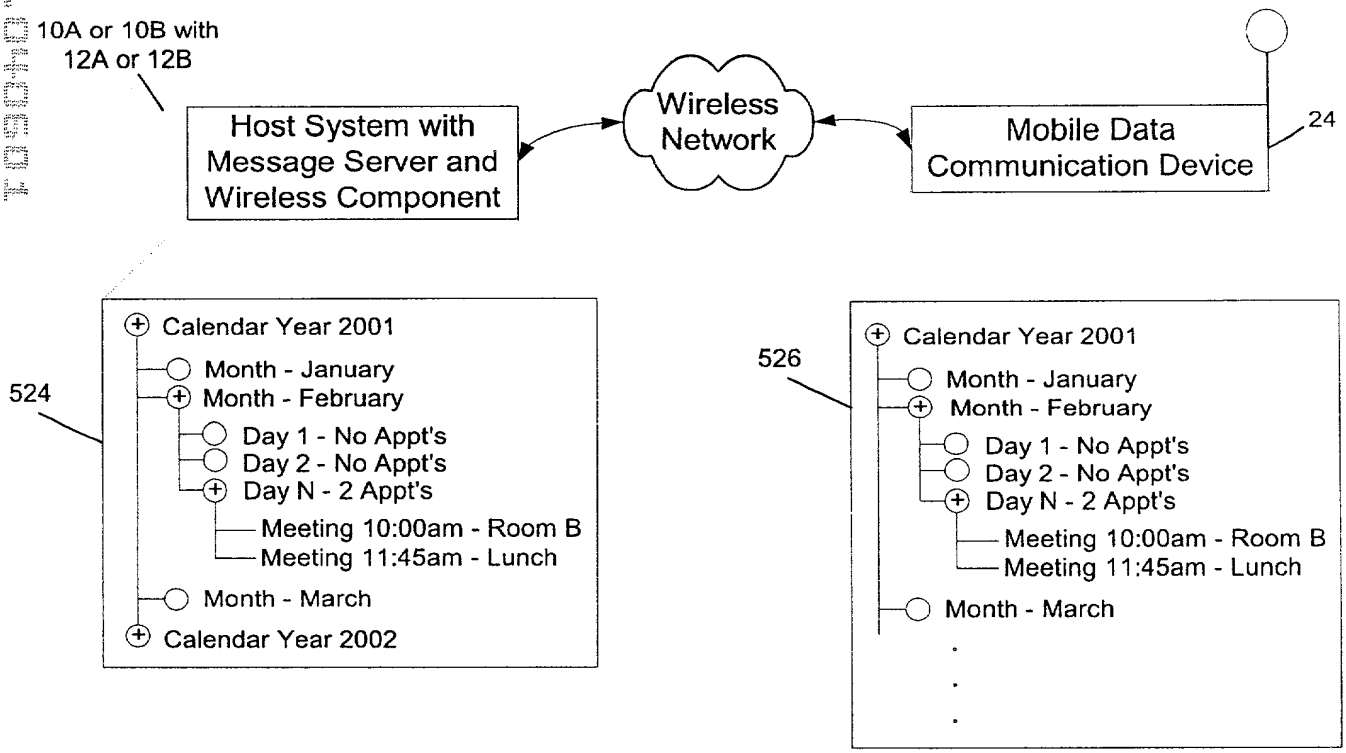
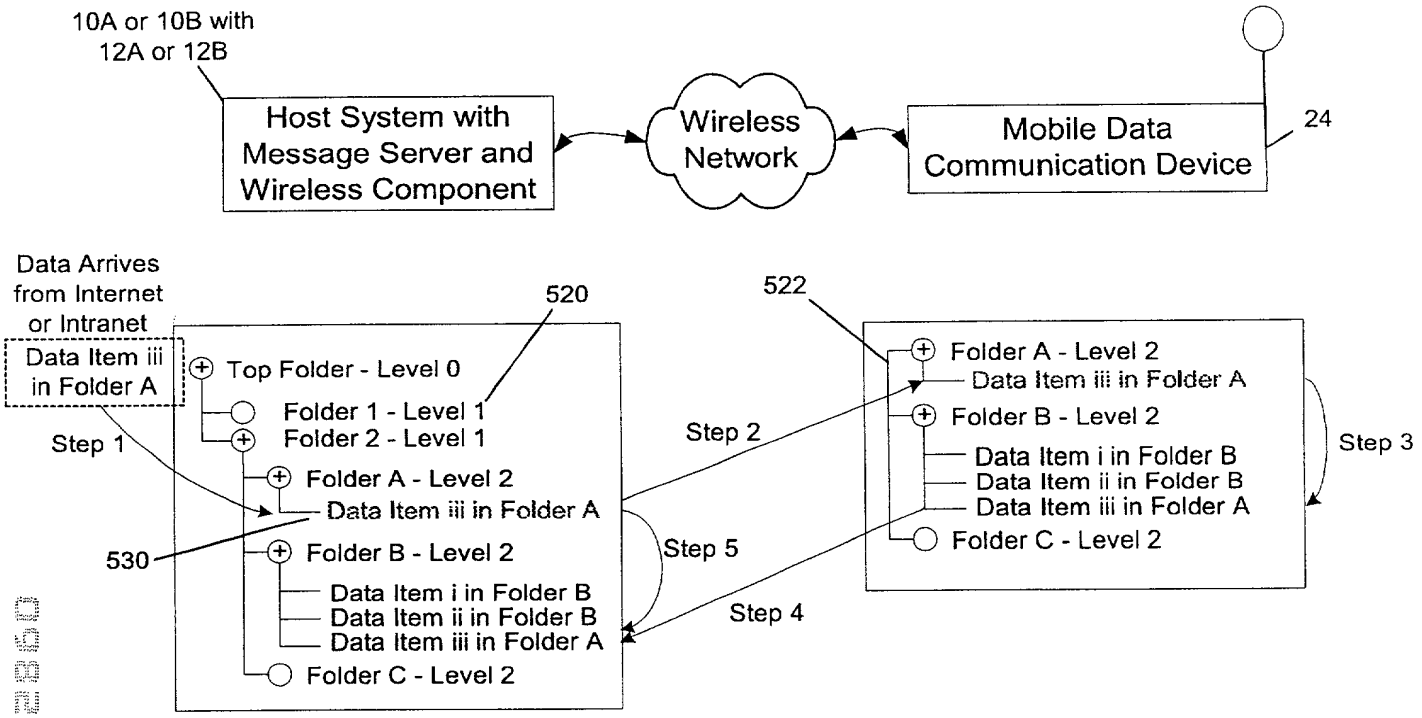


Figure 19a



09827608 040601

Figure 19b

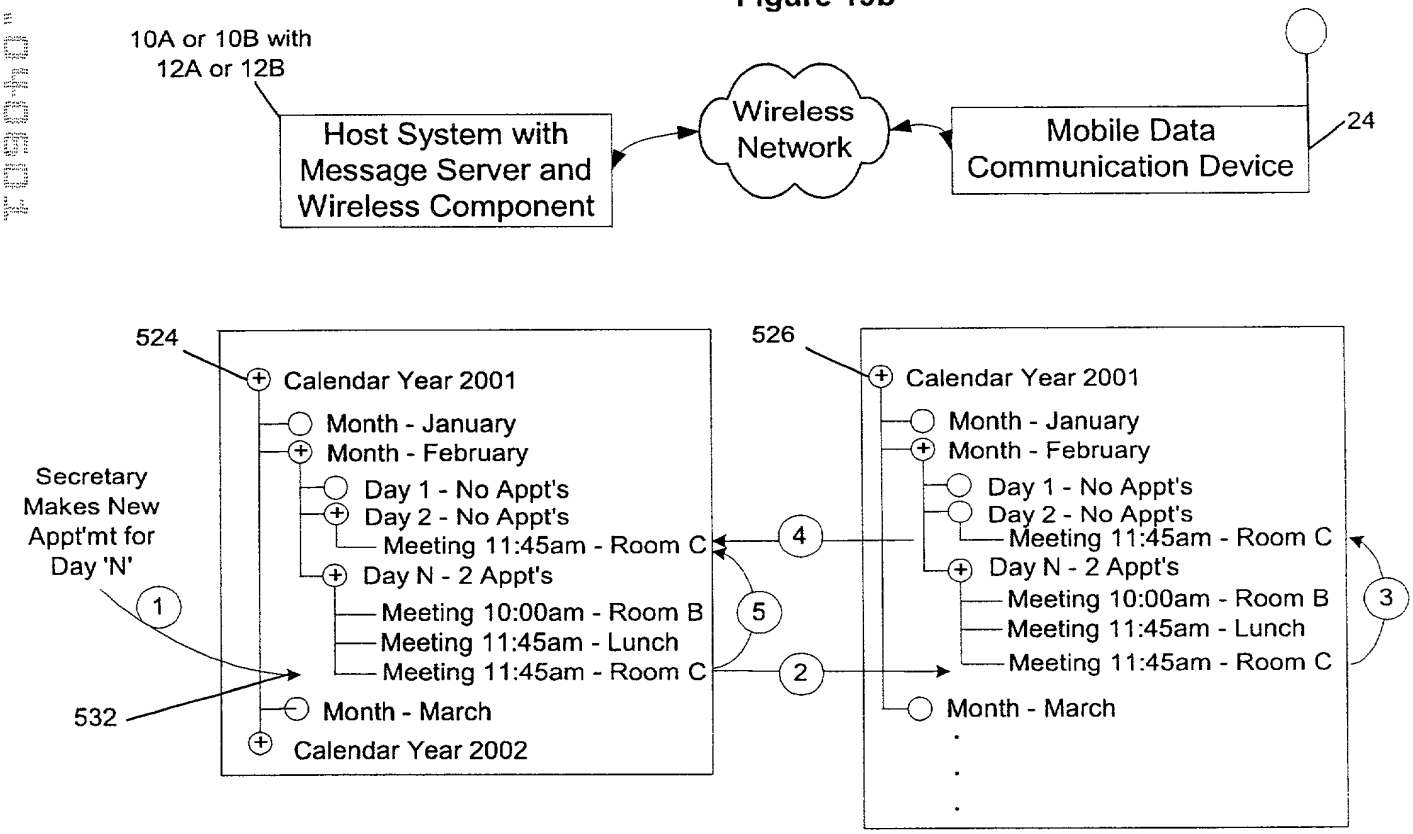


Figure 20a

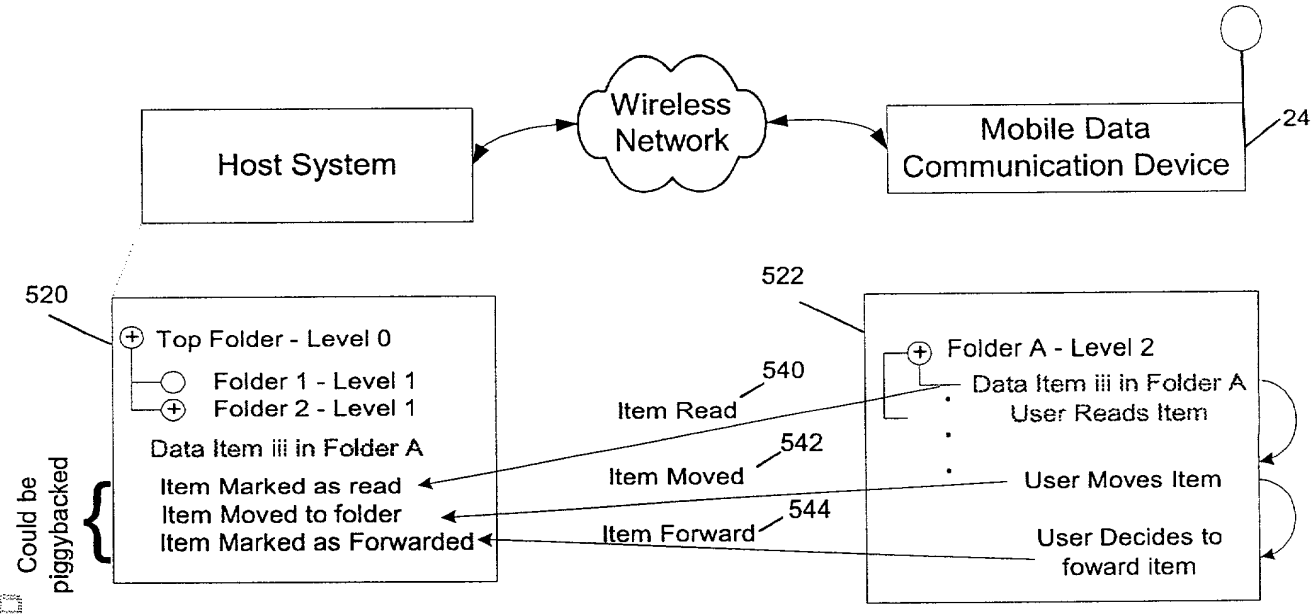


Figure 20b

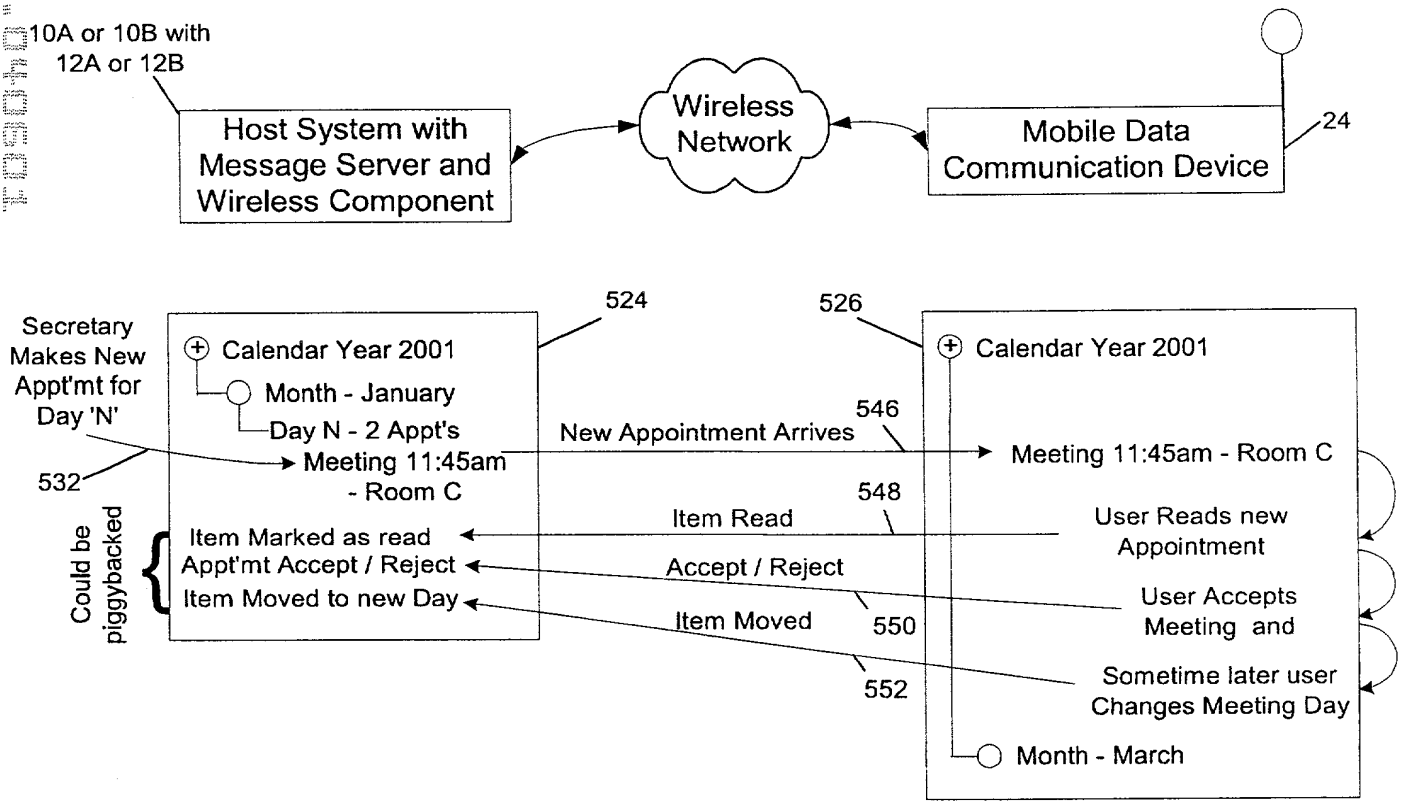


Figure 21

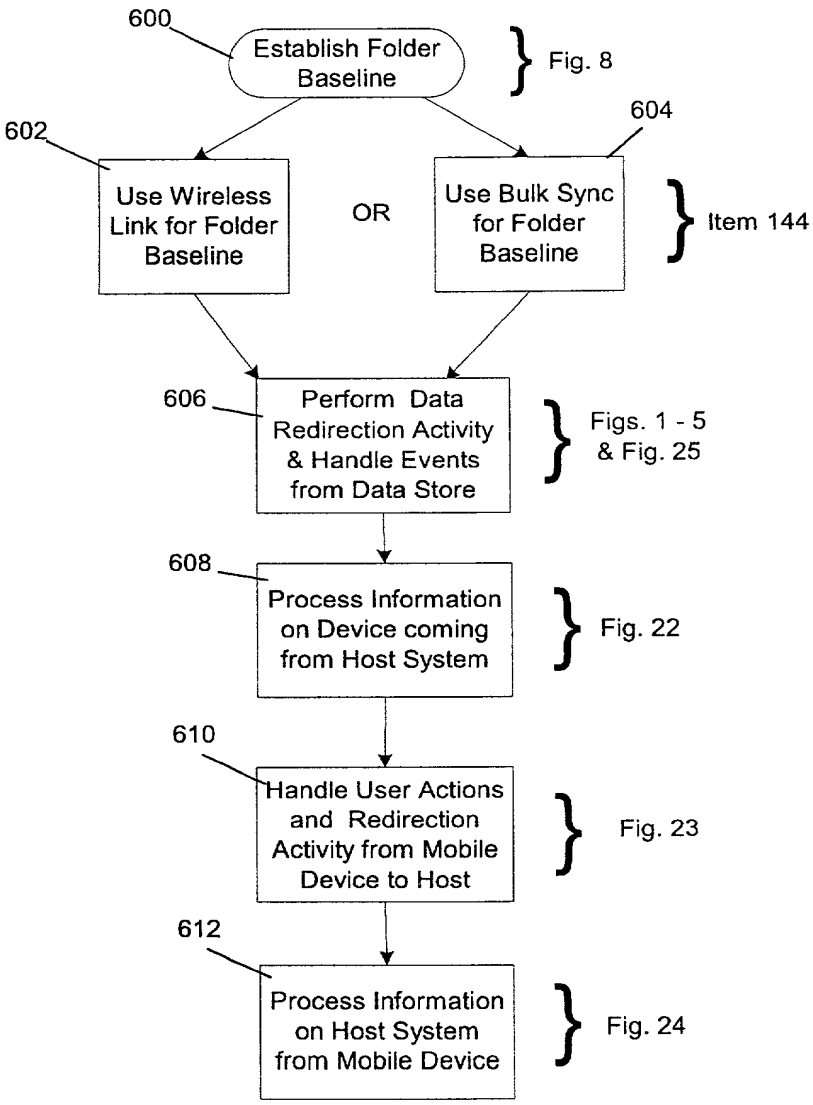


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Figure 22a

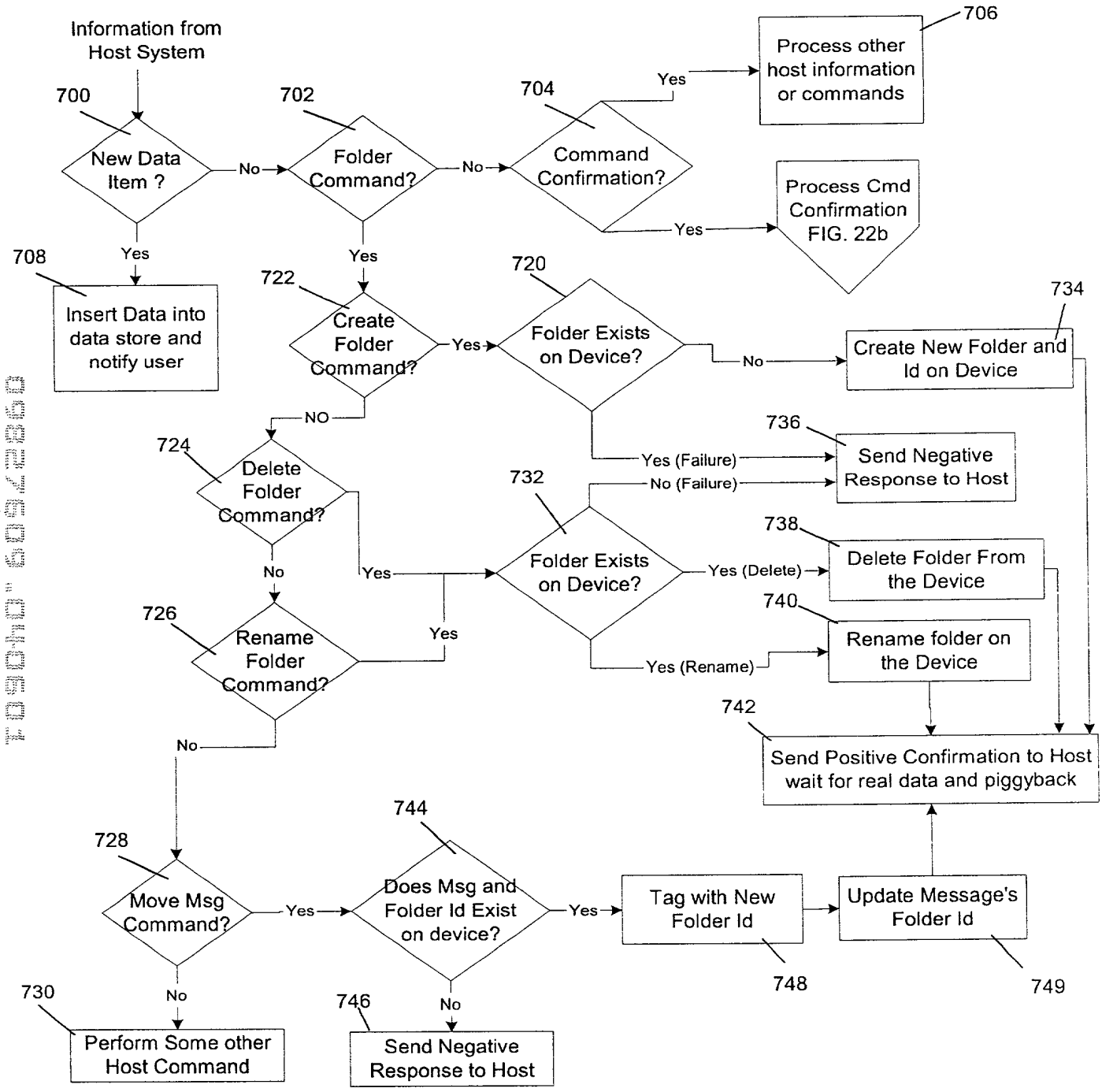
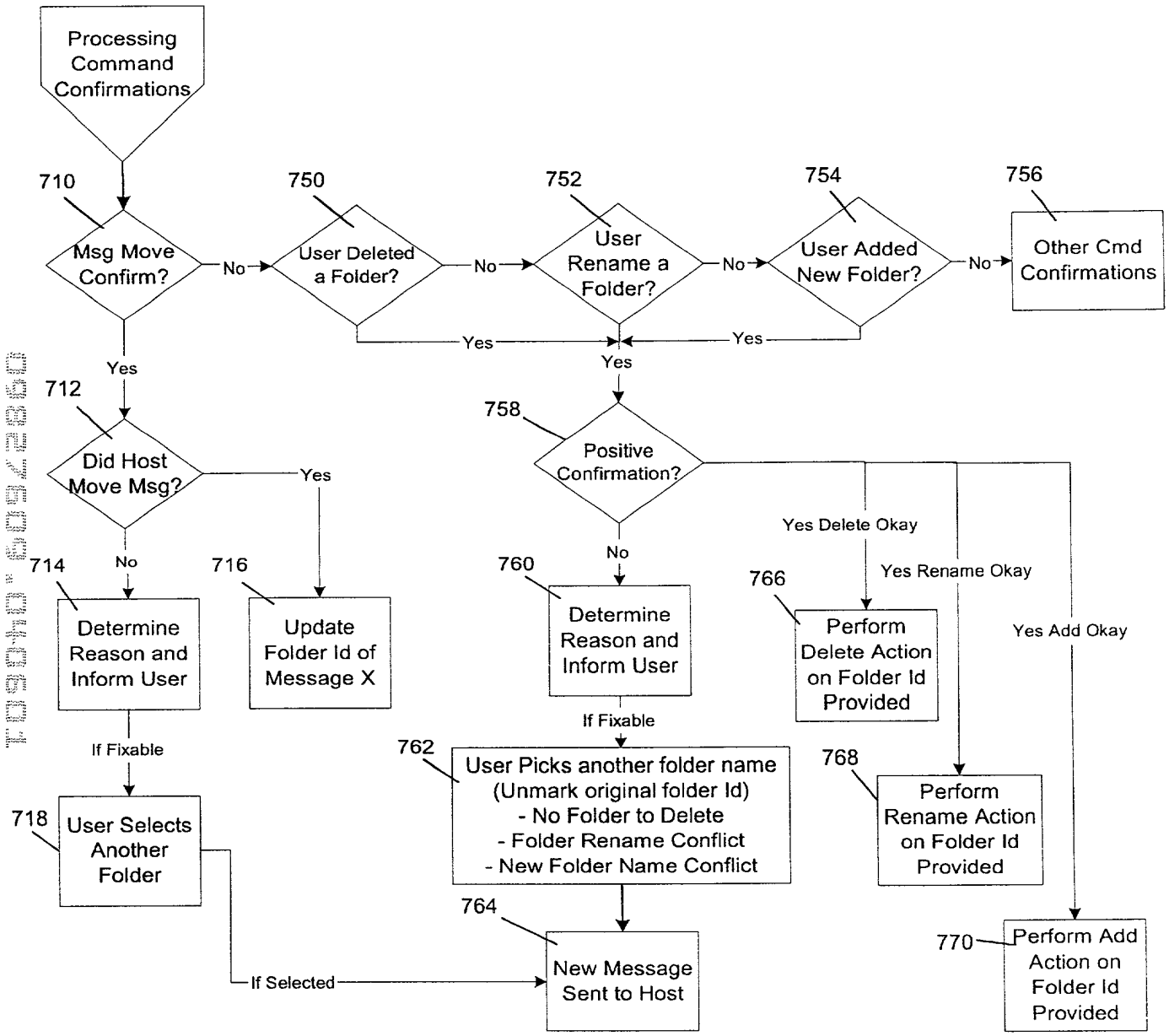
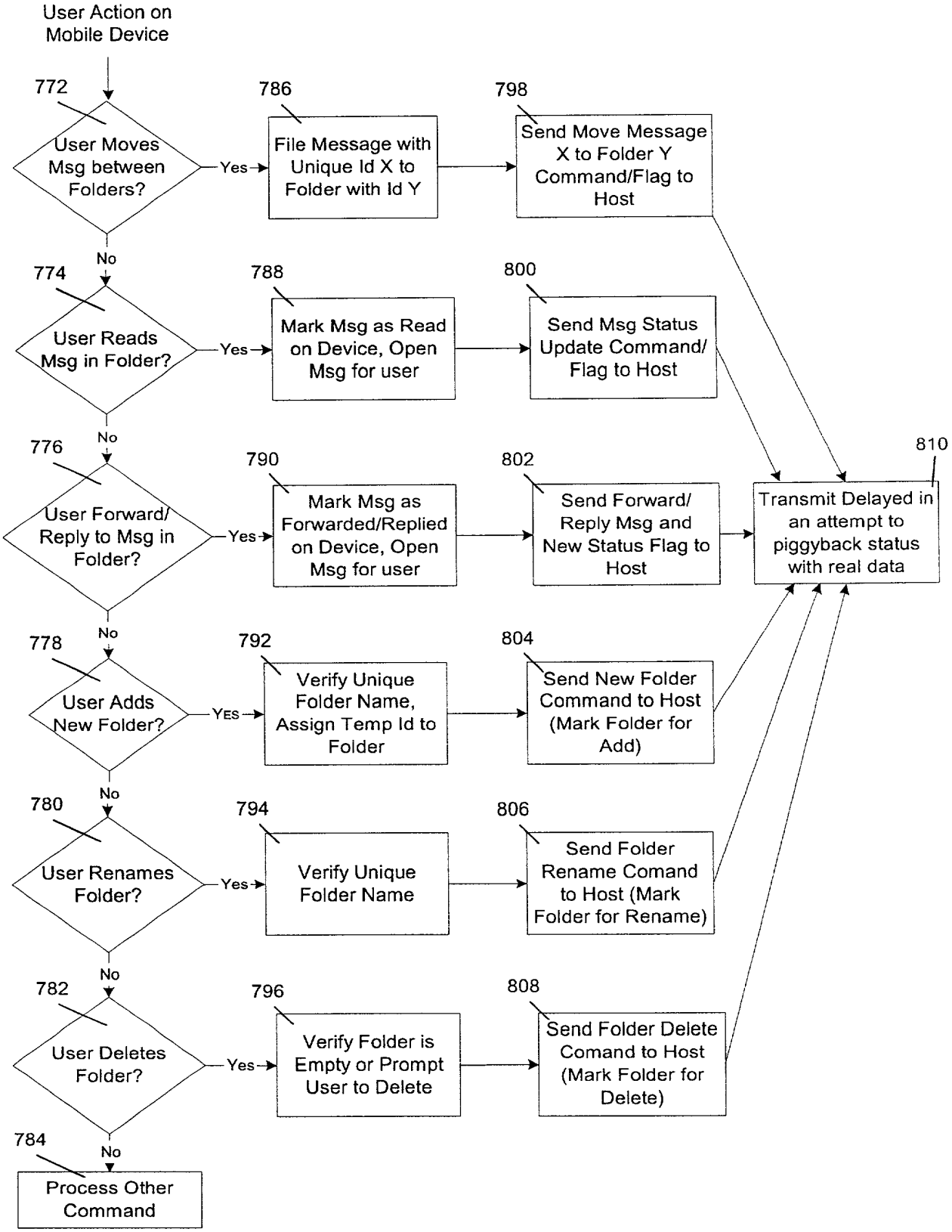

Information from Host System
700
New Data Item ?
No
702
Folder Command?
No
704
Command Confirmation?
Yes
706
Process other host information or commands
Yes
Process Cmd Confirmation FIG. 22b
Yes
708
Insert Data into data store and notify user
Yes
722
Create Folder Command?
Yes
720
Folder Exists on Device?
No
734
Create New Folder and Id on Device
NO
724
Delete Folder Command?
Yes (Failure)
736
Send Negative Response to Host
No (Failure)
732
Folder Exists on Device?
Yes (Delete)
738
Delete Folder From the Device
No
Yes
726
Rename Folder Command?
Yes
Yes (Rename)
740
Rename folder on the Device
No
742
Send Positive Confirmation to Host wait for real data and piggyback
728
Move Msg Command?
Yes
744
Does Msg and Folder Id Exist on device?
Yes
Tag with New Folder Id
748
Update Message's Folder Id
749
No
730
Perform Some other Host Command
No
746
Send Negative Response to Host

Figure 22b



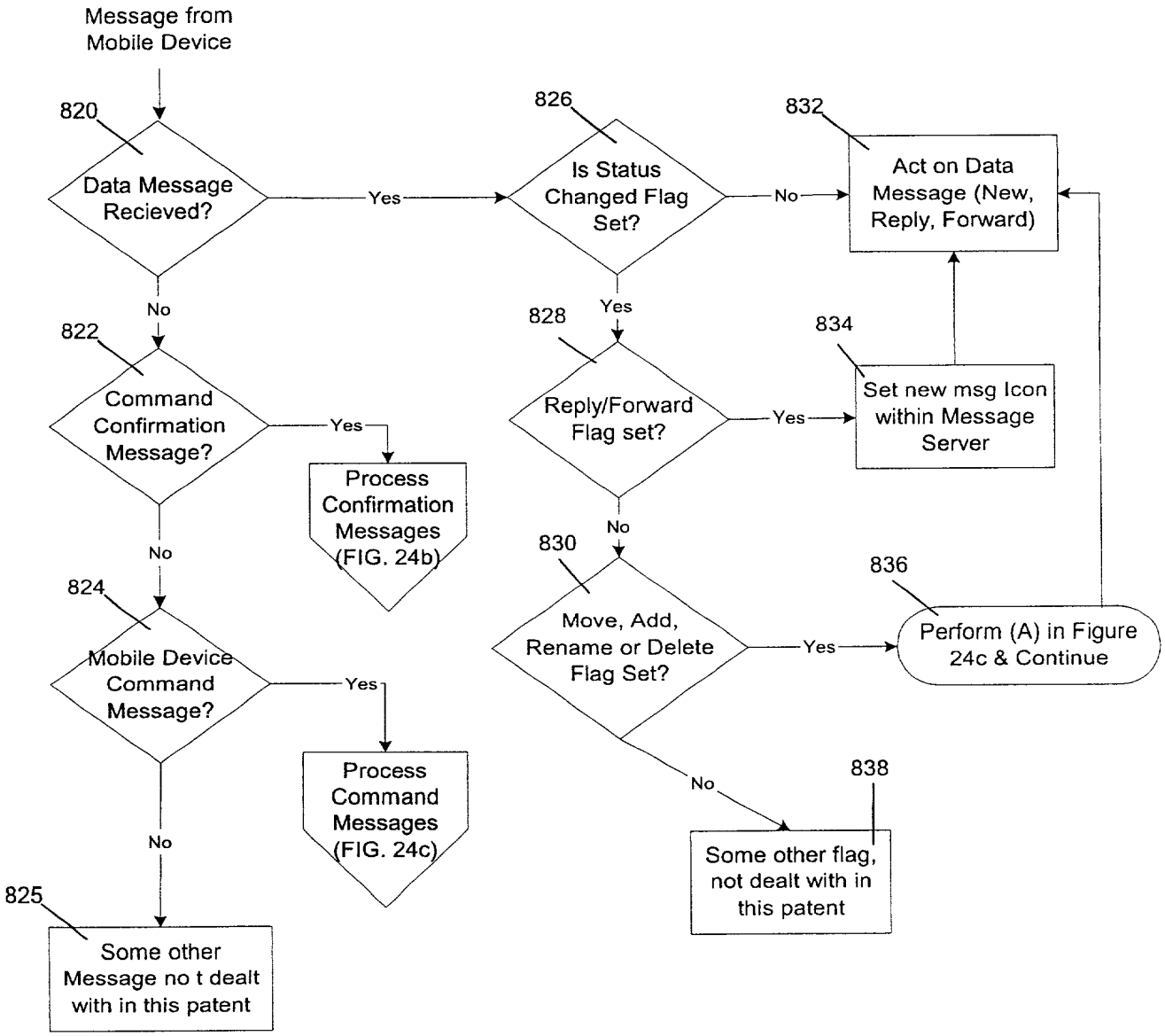
US 2007/0168501 A1

Figure 23



US 2009/0215469 A1

Figure 24a



US 2007/0060134 A1

Figure 24b

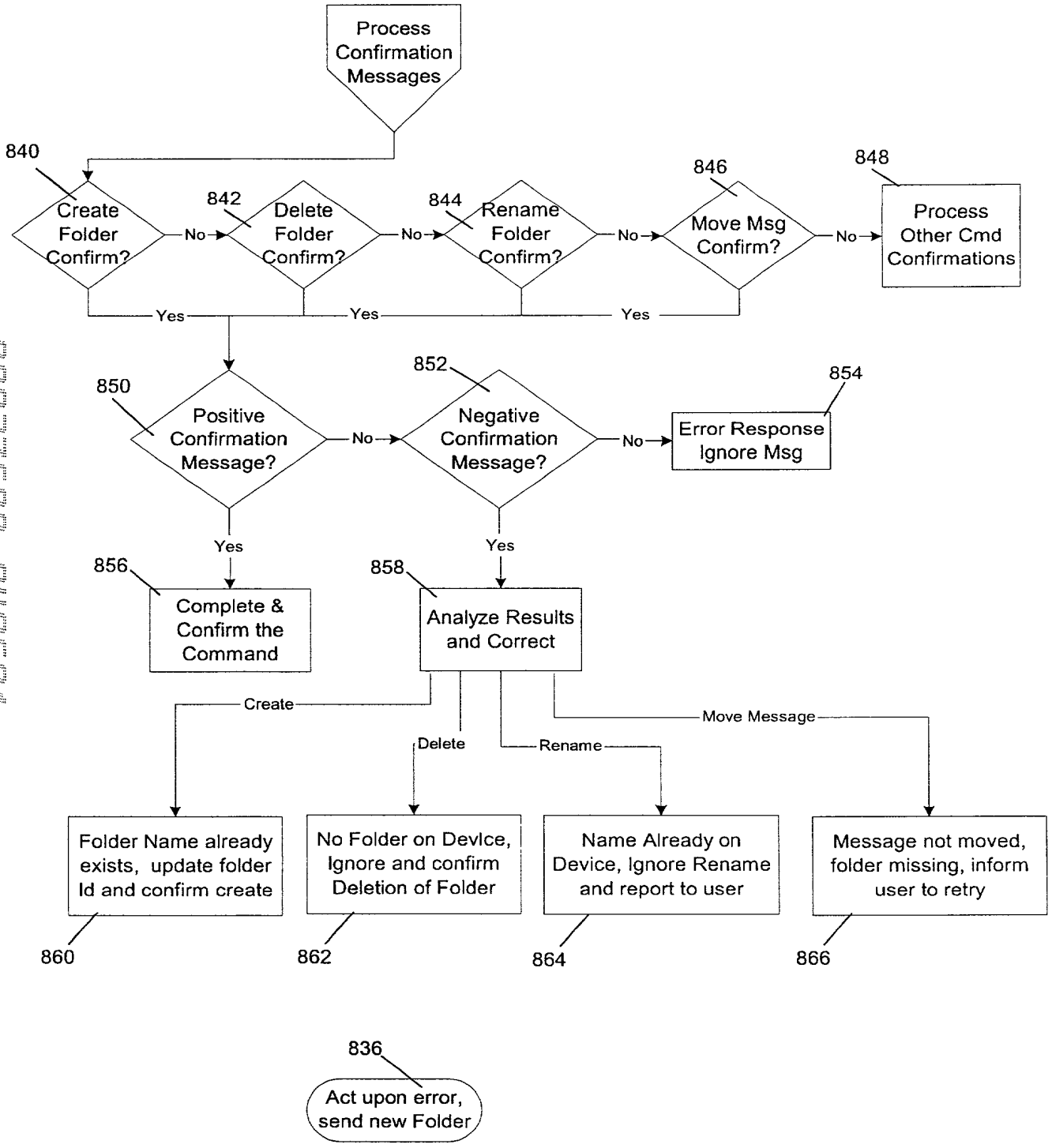

Process Confirmation Messages
840
Create Folder Confirm?
No
842
Delete Folder Confirm?
No
844
Rename Folder Confirm?
No
846
Move Msg Confirm?
No
848
Process Other Cmd Confirmations
Yes
Yes
Yes
850
Positive Confirmation Message?
No
852
Negative Confirmation Message?
No
854
Error Response Ignore Msg
Yes
Yes
856
Complete & Confirm the Command
858
Analyze Results and Correct
Create
Delete
Rename
Move Message
Folder Name already exists, update folder Id and confirm create
860
No Folder on Device, Ignore and confirm Deletion of Folder
862
Name Already on Device, Ignore Rename and report to user
864
Message not moved, folder missing, inform user to retry
866
836
Act upon error, send new Folder

Figure 24c

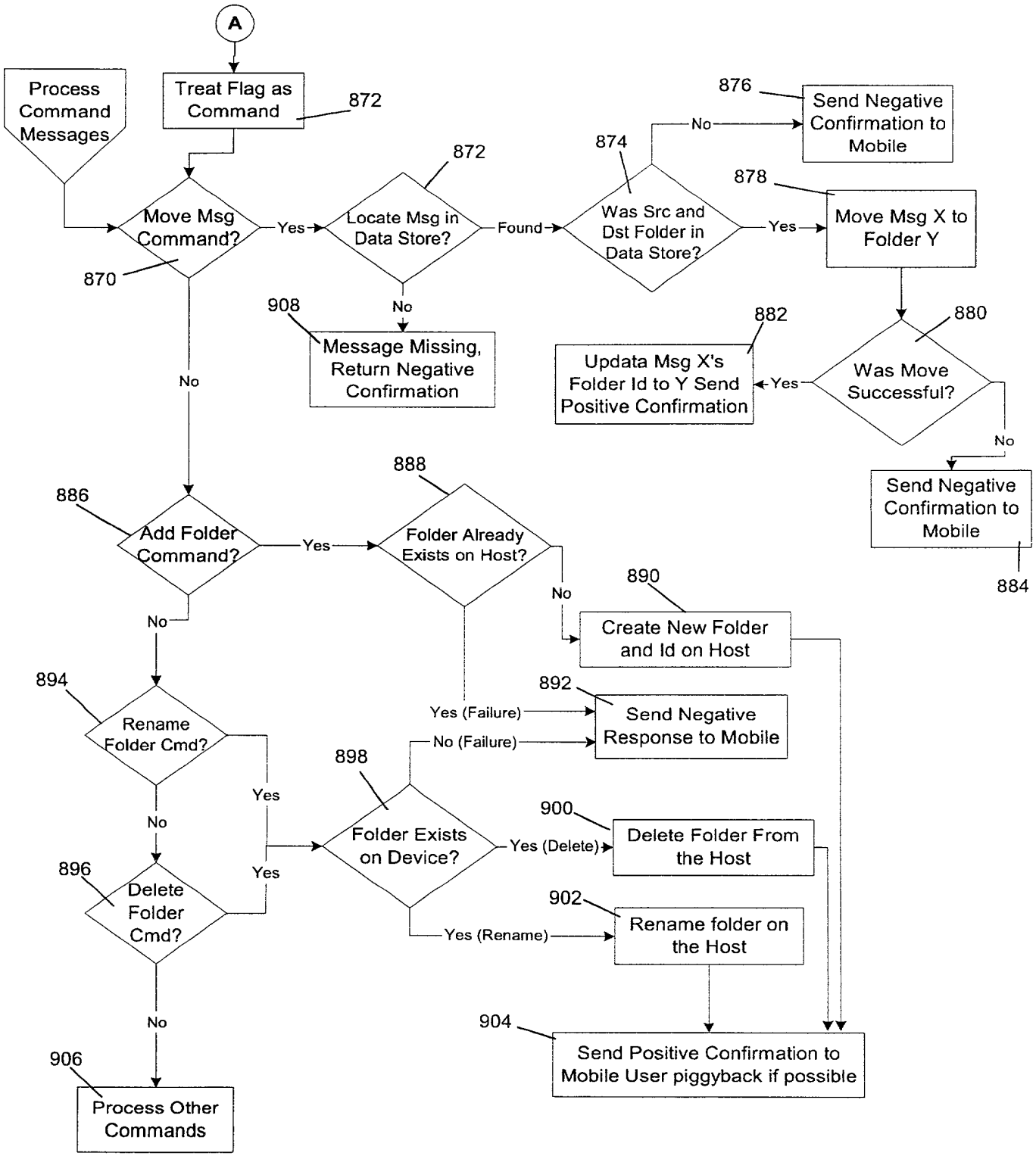

A
Process Command Messages
Treat Flag as Command
872
Move Msg Command?
Yes
Locate Msg in Data Store?
872
Found
Was Src and Dst Folder in Data Store?
874
No
Send Negative Confirmation to Mobile
876
Yes
Move Msg X to Folder Y
878
870
No
908
Message Missing, Return Negative Confirmation
Was Move Successful?
880
Yes
Updata Msg X's Folder Id to Y Send Positive Confirmation
882
No
Send Negative Confirmation to Mobile
884
886
Add Folder Command?
Yes
Folder Already Exists on Host?
888
No
890
Create New Folder and Id on Host
No
894
Rename Folder Cmd?
Yes (Failure)
No (Failure)
892
Send Negative Response to Mobile
898
Yes
No
Folder Exists on Device?
Yes (Delete)
900
Delete Folder From the Host
896
Delete Folder Cmd?
Yes
Yes (Rename)
902
Rename folder on the Host
No
904
Send Positive Confirmation to Mobile User piggyback if possible
906
Process Other Commands

Figure 25

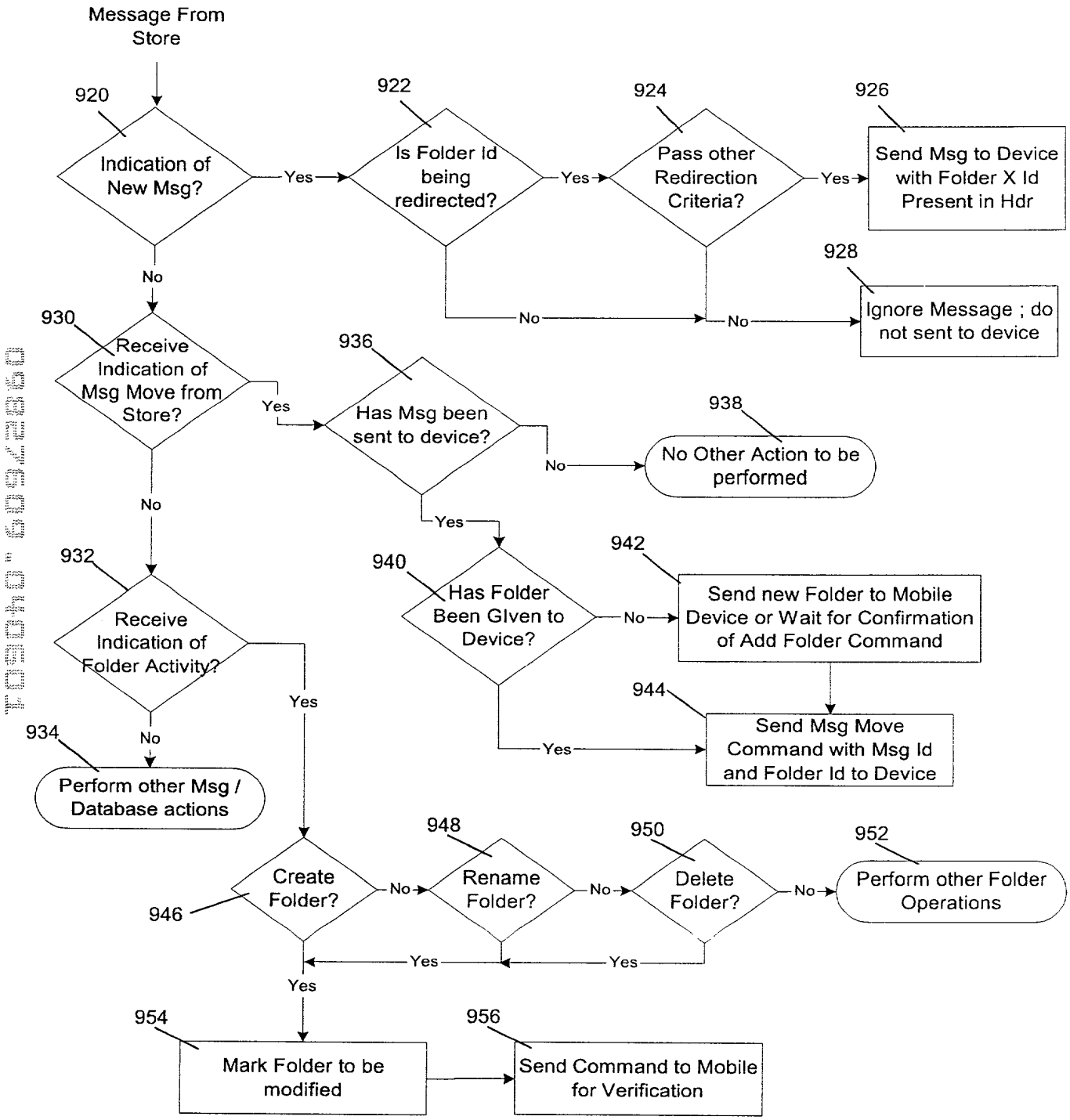
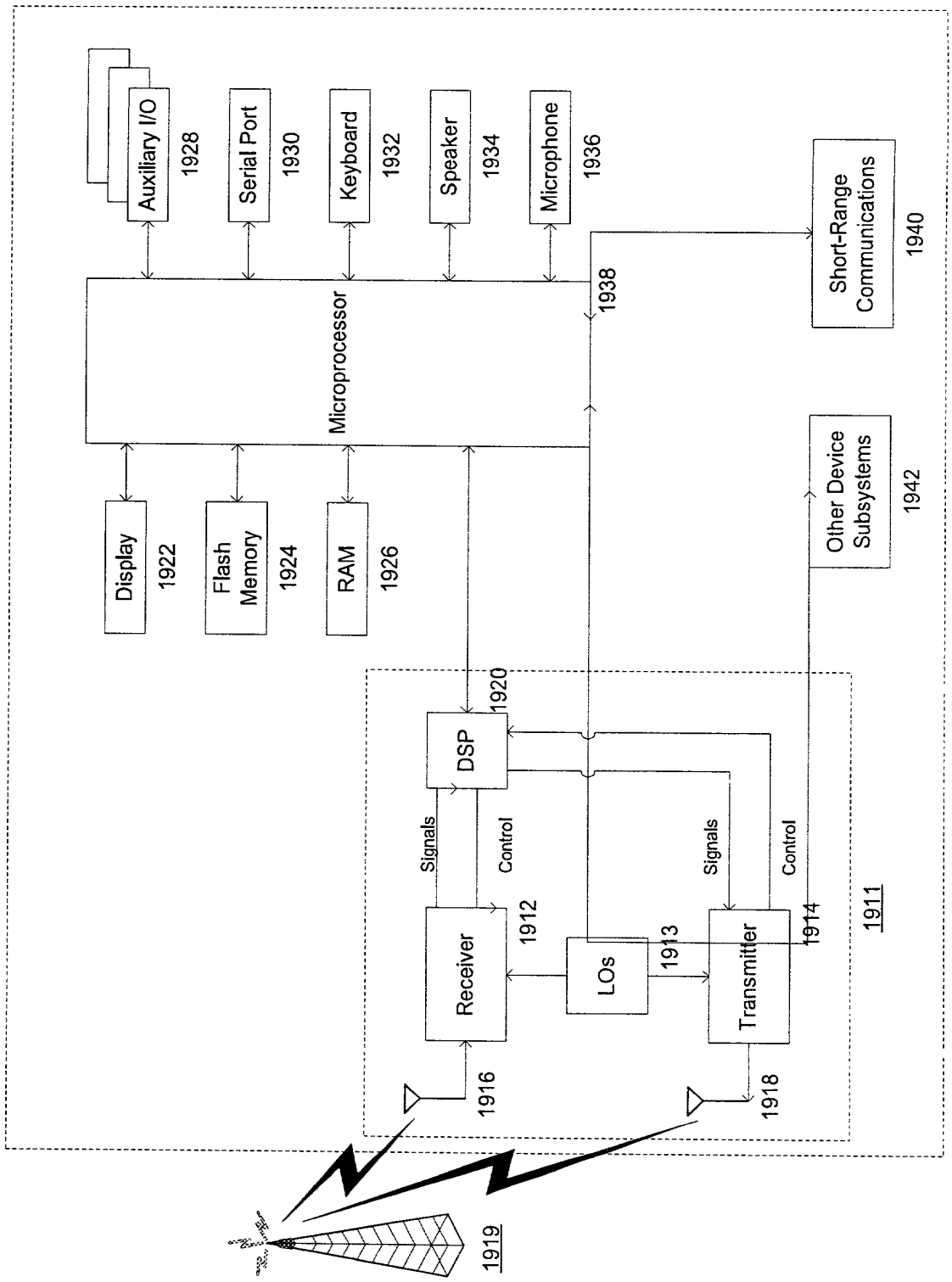

Message From Store
920
Indication of New Msg?
Yes
922
Is Folder Id being redirected?
Yes
924
Pass other Redirection Criteria?
Yes
926
Send Msg to Device with Folder X Id Present in Hdr
No
No
No
928
Ignore Message ; do not sent to device
930
Receive Indication of Msg Move from Store?
Yes
936
Has Msg been sent to device?
No
938
No Other Action to be performed
No
Yes
932
Receive Indication of Folder Activity?
940
Has Folder Been Given to Device?
No
942
Send new Folder to Mobile Device or Wait for Confirmation of Add Folder Command
Yes
944
Send Msg Move Command with Msg Id and Folder Id to Device
No
934
Perform other Msg / Database actions
Yes
946
Create Folder?
No
948
Rename Folder?
No
950
Delete Folder?
No
952
Perform other Folder Operations
Yes
Yes
Yes
954
Mark Folder to be modified
956
Send Command to Mobile for Verification

FIGURE 26


Auxiliary I/O
1928
Serial Port
1930
Keyboard
1932
Speaker
1934
Microphone
1936
Microprocessor
1938
Short-Range Communications
1940
Other Device Subsystems
1942
Display
1922
Flash Memory
1924
RAM
1926
DSP
1920
Signals
Control
Signals
Control
Receiver
1912
LOs
1913
Transmitter
1914
1911
1916
1918
1919
24